TOSHIBA

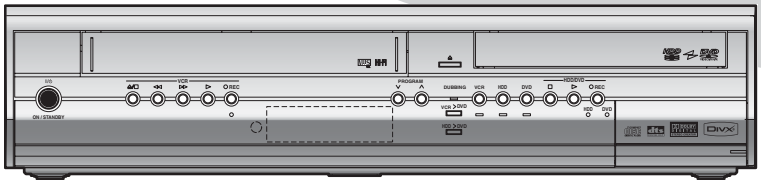
FILE NO. 810-200662GR

REVISED: 02

SERVICE MANUAL

HDD & DVD / Video Cassette Recorder

RD-XV45KE
RD-XV45KB
RD-XV45KF



The above models are classified as green products (*1), as indicated by the underlined serial numbers. This Service Manual describes replacement parts for the green products. When repairing these green product(s), use the part(s) described in this manual and lead-free solder (*2).

For (*1) and (*2), see the next page.

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(*1) GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

(*2) LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING

This product is manufactured using lead free solder.

DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT !

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or BOARD being soldered. Great care should be made to ensure high-quality soldering when servicing this product — especially when soldering large components, through-hole pins, and on BOARDs — as the level of heat required to melt lead-free solder is high.

MAIN SECTION

HDD & DVD / Video Cassette Recorder

RD-XV45KE/RD-XV45KB/RD-XV45KF

Main Section
- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **BOARD's**
- **Exploded Views**
- **Parts List**

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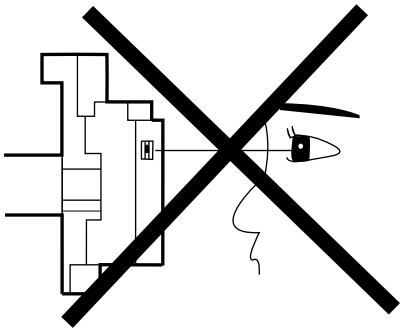
SPECIFICATIONS

General	
System	HDD, DVD-Video, DVD-RW/R, VCD, CD-DA, CD-RW/R, Video Cassette Tape
VCR Video Heads	Four heads
HDD	Internal 3.5 inch HDD 160 GB
Power requirements	220–240V ~ ± 10%, 50Hz ± 0.5%
Power consumption	60W (standby: 8.5W)
Weight	5.8kg
Dimensions (width x height x depth)	435 x 99.5 x 380mm
Operating temperature	5°C to 40°C
Operating humidity	Less than 80% (no condensation)
TV format	PAL BG / DK + SECAM BG / DK (RD-XV45KE) PAL - I (RD-XV45KB) SECAM LL , PAL B / G (RD-XV45KF)
Recording	
Recording format	Video Recording format (DVD-RW only), Video format (DVD-RW, DVD-R)
Recordable discs	DVD-Rewritable, DVD-Recordable
Video recording format Sampling frequency Compression format	 13.5MHz MPEG
Audio recording format Sampling frequency Compression format	 48kHz Dolby Digital
Tuner	
Receivable channels	E2 - E69 (RD-XV45KE) IRA - E69 (RD-XV45KB) "L(SECAM L)" F1 - E69 (RD-XV45KF) "BG(PAL B / G)" E2 - E69 (RD-XV45KF)
Input/Output	
Front Panel : (AV3)	
Video input Input level	One RCA connector 1Vp-p (75 Ω)
S-Video input Input level	One Mini DIN 4-pin jack Y (luminance) 1Vp-p (75 Ω) C (colour) 300mVp-p (75 Ω)
Audio input Input level :	Two RCA connectors 2Vrms (Input impedance: more than 10k Ω)
Rear Panel	
VHF/UHF antenna input/output terminal	VHF/UHF set 75 Ω
Audio input /output	Two 21-pin scart jack (AV1, AV2)
Video input /output Input /output level : 1Vp-p (75	Two 21-pin scart jack (AV1, AV2) 1Vp-p (75 Ω) each
S-Video output Input /output level	One Mini DIN 4-pin jacks Y (luminance) 1Vp-p (75 Ω) C (colour) 300mVp-p (75 Ω)
Audio output Output level	Two RCA connectors 2Vrms (Output impedance: ≃ 680 Ω)
Digital audio output Output level	One Coaxial pin jack 500mVp-p (75 Ω)

Note
The specifications and design of this unit are subject to change without notice.

LASER BEAM SAFETY PRECAUTIONS

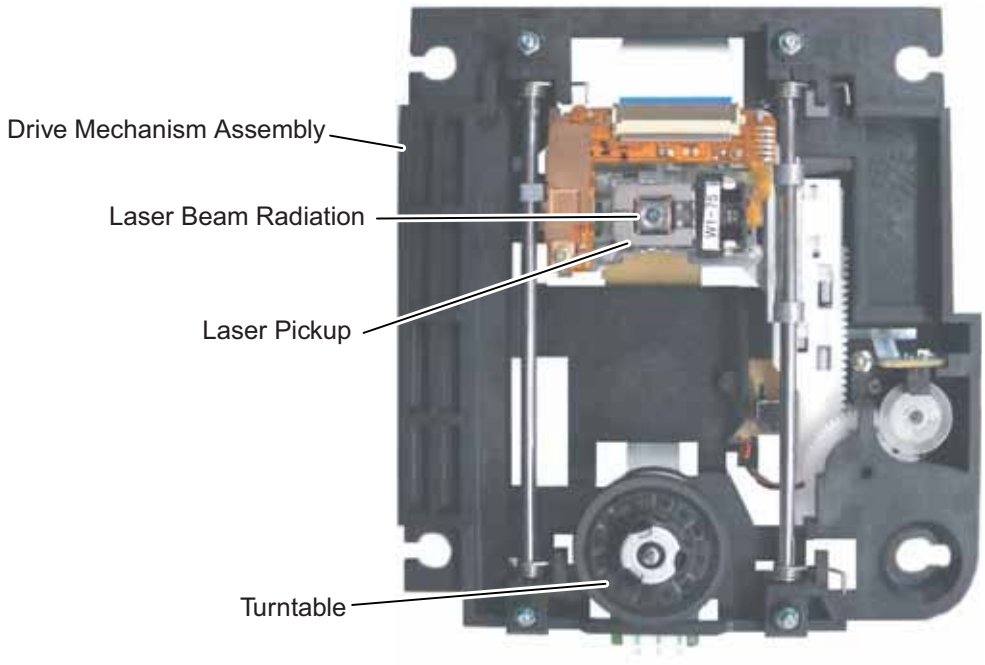
This DVD player uses a pickup that emits a laser beam.

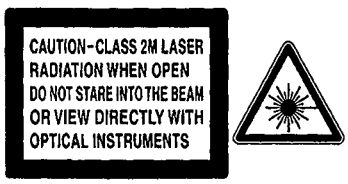


Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.





Location: Inside Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1)Wires covered with PVC tubing

2)Double insulated wires

3)High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1)Insulation tape

2)PVC tubing

3)Spacers

4)Insulators for transistors

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

G. Check that replaced wires do not contact sharp edges or pointed parts.

H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure

1)Remove the old connector by cutting the wires at a point close to the connector.

Important: Do not re-use a connector. (Discard it.)

2)Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

3)Align the lengths of the wires to be connected. Insert the wires fully into the connector.

4)Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1 : Ratings for selected area

AC Line Voltage	Clearance Distance (d), (d')
220 to 240 V	≥ 3 mm(d) ≥ 6 mm(d')

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

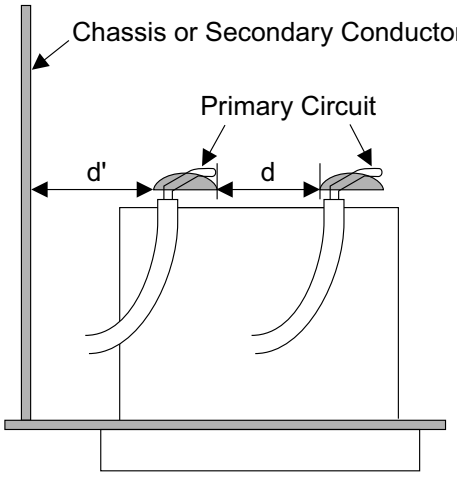


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON) :

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

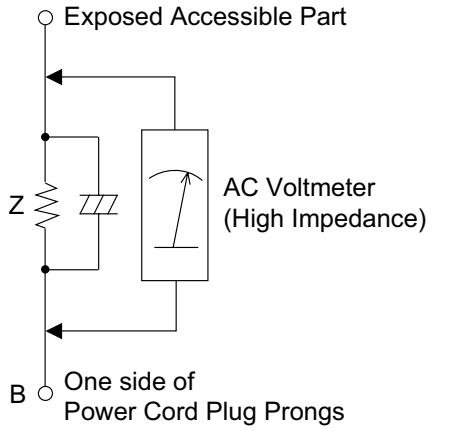


Fig. 2

Table 2: Leakage current ratings for selected areas

AC Line Voltage	Load Z	Leakage Current (i)	One side of power cord plug prongs (B) to:
220 to 240 V	2kΩ RES. Connected in parallel	i≤0.7mA AC Peak i≤2mA DC	RF or Antenna terminals
	50kΩ RES. Connected in parallel	i≤0.7mA AC Peak i≤2mA DC	A/V Input, Output

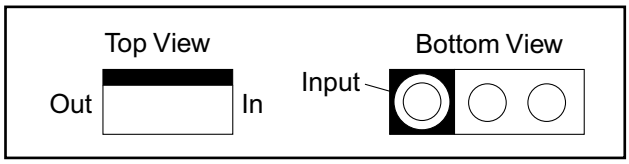
Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

STANDARD NOTES FOR SERVICING

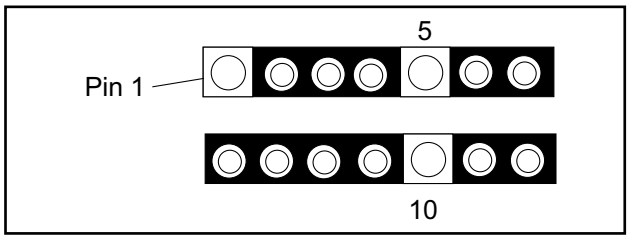
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

Circuit Board Indications

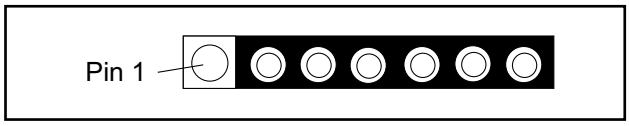
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

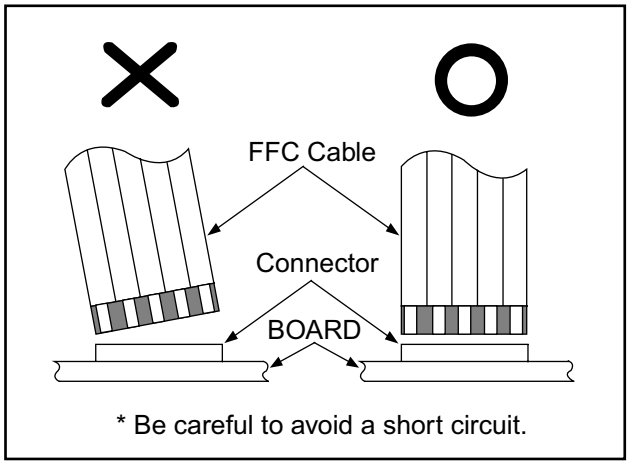


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

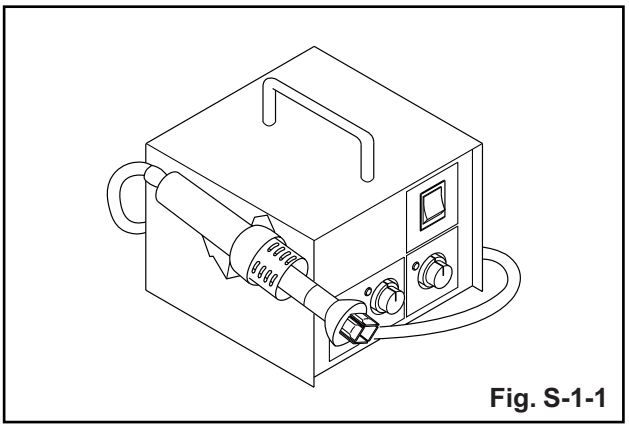


Fig. S-1-1

2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the BOARD; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the BOARD using tweezers. (Fig. S-1-6)

CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

3. The flat pack-IC on the BOARD is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

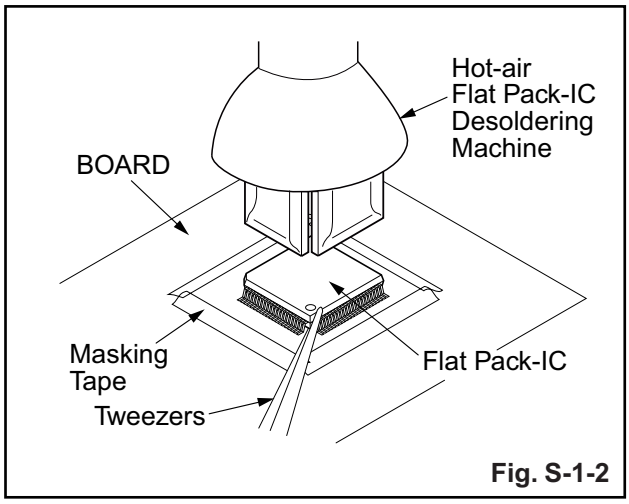


Fig. S-1-2

With Soldering Iron:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

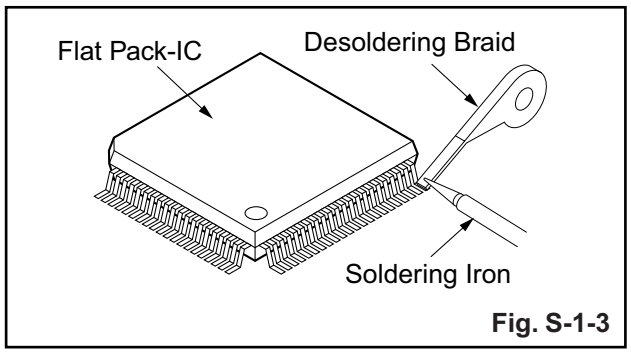


Fig. S-1-3

2. Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

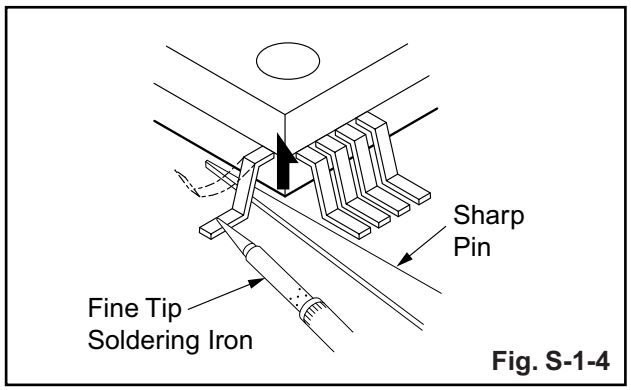


Fig. S-1-4

3. Bottom of the flat pack-IC is fixed with glue to the BOARD; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the BOARD using tweezers. (Fig. S-1-6)

With Iron Wire:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the BOARD contact pads as shown in Fig. S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the BOARD; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the BOARD using tweezers. (Fig. S-1-6)

Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the BOARD, handle it gently because it may be damaged if force is applied.

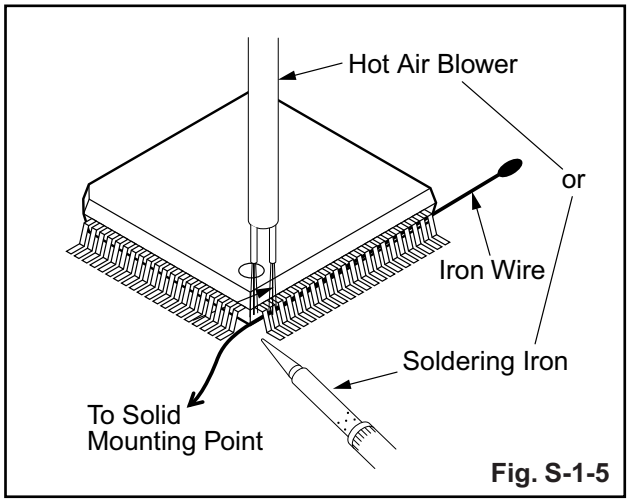


Fig. S-1-5

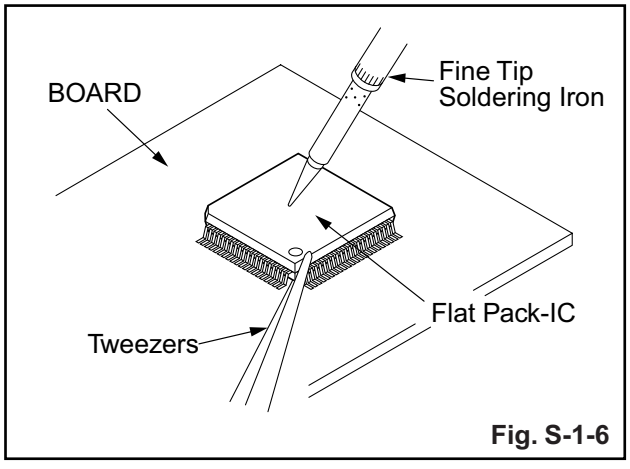


Fig. S-1-6

2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the BOARD so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the BOARD when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

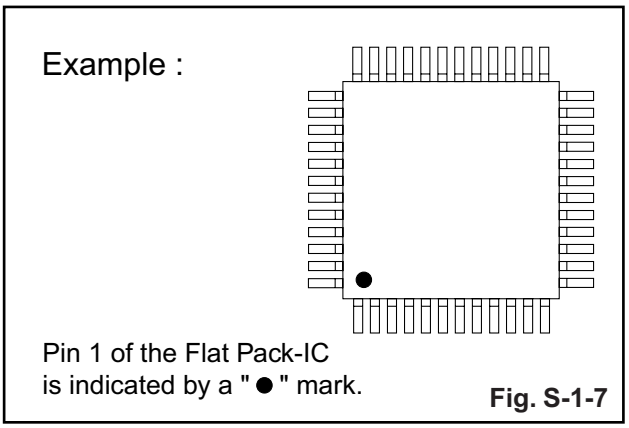


Fig. S-1-7

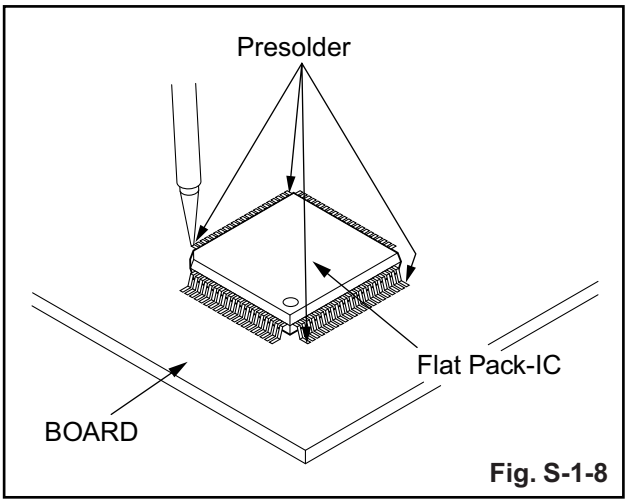


Fig. S-1-8

Instructions for Handling Semi-conductors

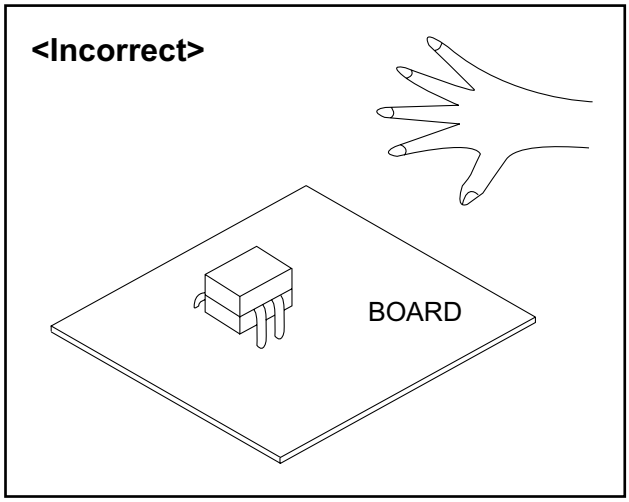
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

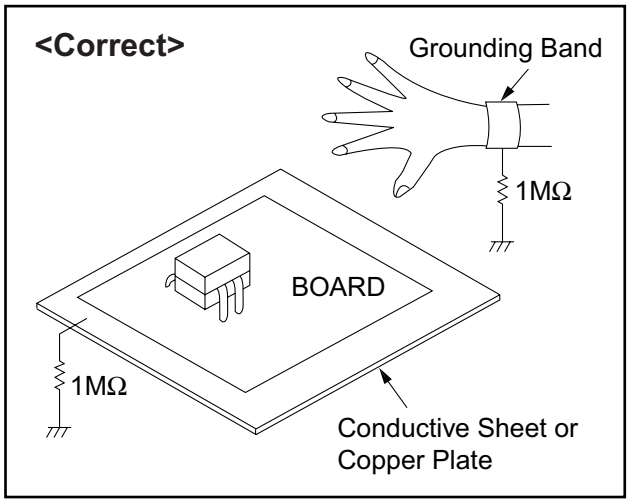
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.





HANDLING PRECAUTIONS FOR HDD

CAUTION:

1. SHOCK

a. Exposing HDD to shock may be the biggest damaging factor. Please note that HDD is easily damaged even if dropped from any height. Be sure to place HDD on a shock-absorbent mat. Also, be careful when transporting HDD.

b. Be careful not to subject HDD to any shock when tightening screws for HDD replacement. **(Tighten screws manually, not with an electric driver.)**

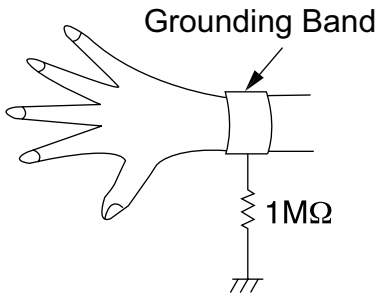
2. MOISTURE

a. Moisture may also be a damaging factor. HDD is semiclosed style. Sudden changes in ambient temperature may cause moisture to form. Monitor temperature and do not allow moisture to form on the media surface. Also, when opening HDD package, do so only after package is at ambient temperature.

b. After replacing HDD, leave it to reach room temperature (about 2 hours) for preventing dew internal condensation, and then work necessary task such as operation check.

3. STATIC ELECTRICITY

a. After removing HDD or taking replacement HDD out of the protective bag (the replacement HDD is packed in a protective bag), place HDD on a conductive surface. A grounding band should be worn when handling.



Both the conductive surface and grounding band should be grounded.

b. Make sure that HDD is placed on main unit completely and then let go of it, when assembling.

c. Do not put HDD on a packing bag. (for preventing electrostatic damage)

4. OTHERS

a. Be careful so as not to do the followings. Otherwise, HDD might be damaged.

- **DO NOT** disassemble HDD.
- When handling HDD, be sure to hold both sides securely.

b. HDD should be stored, packed in the protective bag, in suitable surroundings (i.e., no extreme changes in temperature to avoid condensation).

c. When transporting HDD, be sure to use the exclusive packing case (the replacement HDD carton).

d. Do not stack HDDs.

e. Do not place vertically because HDD is unstable and easy to fall.

PREPARATION FOR SERVICING

How to Enter the Service Mode

About Optical Sensors

Caution:

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

What to do for preparation

Insert a tape into the Deck Mechanism Assembly and press [▷] (VCR) button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, connect TP501 (S-INH) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

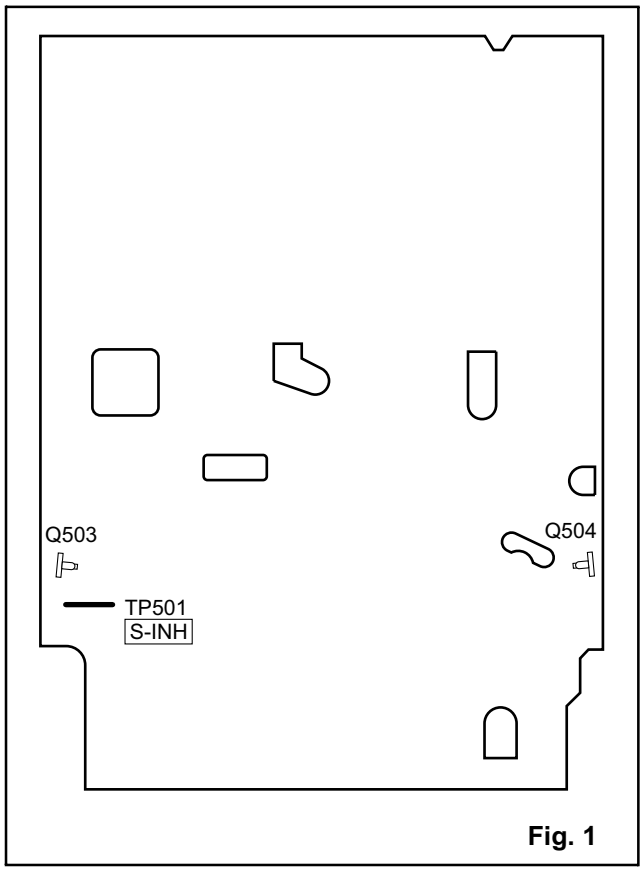


Fig. 1

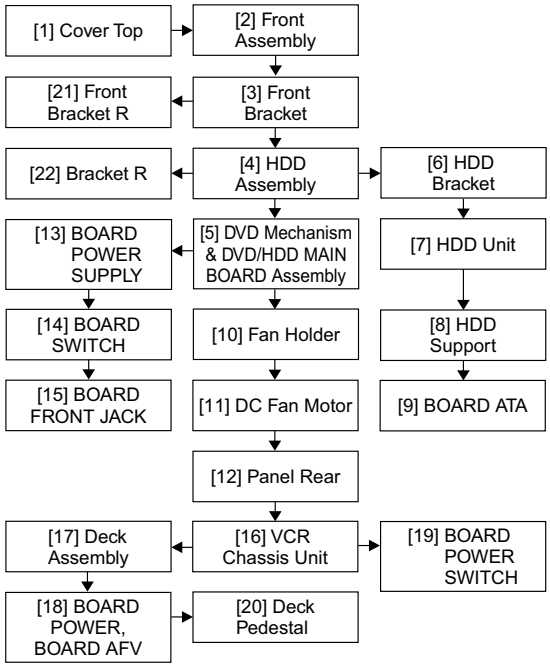
Note: Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

CABINET DISASSEMBLY INSTRUCTIONS

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Cover Top	D1	7(S-1)	---
[2]	Front Assembly	D2	(S-2), *5(L-1), *3(L-2)	1 1-1 1-2
[3]	Front Bracket	D2	2(S-3), 3(S-3B), Front Support	---
[4]	HDD Assembly	D3	3(S-4), *CN201, *CN1003	---
[5]	DVD Mechanism & DVD/ HDD MAIN BOARD Assembly	D3	2(S-5), 2(S-6), *CN1001, *CN1504, Wiresheet	2
[6]	HDD Bracket	D4	4(S-7)	---
[7]	HDD Unit	D4	4(S-8), HDD Rubber	3
[8]	HDD Support	D4	Insulation Sheet	---
[9]	BOARD ATA	D4	*CN3001, *CN3002	---
[10]	Fan Holder	D5	2(S-9)	---
[11]	DC Fan Motor	D5	*CN1002	---
[12]	Panel Rear	D5	2(S-10),2(S-10B), 2(S-11)	---
[13]	BOARD POWER SUPPLY	D6	*CL1001, 4(S-12)	---
[14]	BOARD SWITCH	D6	(S-13), Desolder	---
[15]	BOARD FRONT JACK	D6	*CN3001, 2(S-14)	---
[16]	VCR Chassis Unit	D7	5(S-15), 4(S-16), (S-17)	---
[17]	Deck Assembly	D8	(S-18), (S-19) Desolder	4 5
[18]	BOARD POWER, BOARD AFV	D8	----------	---
[19]	BOARD POWER SWITCH	D8	Desolder	---
[20]	Deck Pedestal	D9	8(S-20)	---
[21]	Front Bracket R	D9	(S-21)	---
[22]	Bracket R	D9	2(S-22)	---
		↓ (3)	↓ (4)	↓ (5)
		↓ (1)	↓ (2)	

Note:

(1): Identification (location) No. of parts in the figures

(2): Name of the part

(3): Figure Number for reference

(4): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, L=Locking Tab, S=Screw, CN=Connector
*=Unhook, Unlock, Release, Unplug, or Desolder
e.g. 6(S-1) = six Screws (S-1),
5(L-1) = five Locking Tabs (L-1)

(5): Refer to “Reference Notes.”

Reference Notes

1. Locking Tabs (L-1) and (L-2) are fragile. Be careful not to break them.
   1-1. Remove Screw (S-2).
   1-2. Release five Locking Tabs (L-1).
   1-3. Release three Locking Tabs (L-2) and remove the Front Assembly.
2. Do not replace the DVD Mechanism or the DVD/HDD MAIN BOARD Assembly separately, when replacing the DVD Mechanism & DVD/HDD MAIN BOARD Assembly. Order the new DVD Mechanism & DVD/HDD MAIN BOARD Assembly.
   3-1. Whenever you have replaced the HDD unit, initialize the HDD unit. To initialize the HDD unit, perform the following.To put the HDD & DVD/VCR into the HDD mode, press the [HDD] button on the remote control unit.
   3-2. To put the HDD & DVD/VCR into the self-check mode, after pressing [VARIABLE SKIP] button, press the [3], [6], and [9] buttons on the remote control in that order within three seconds.
   3-3. Press [ENTER] button. The HDD & DVD/VCR is initialized and the power is turned off automatically after two seconds.
3. When reassembling, solder wire jumpers as shown in Fig. D8.
4. Before installing the Deck Assembly, be sure to place the pin of LD-SW on the BOARD POWER as shown in Fig. D8. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. D8.

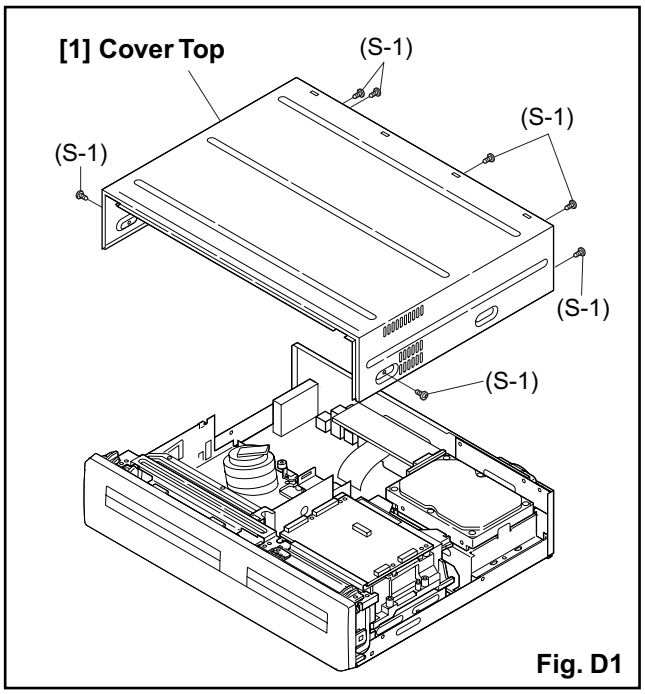


Fig. D1

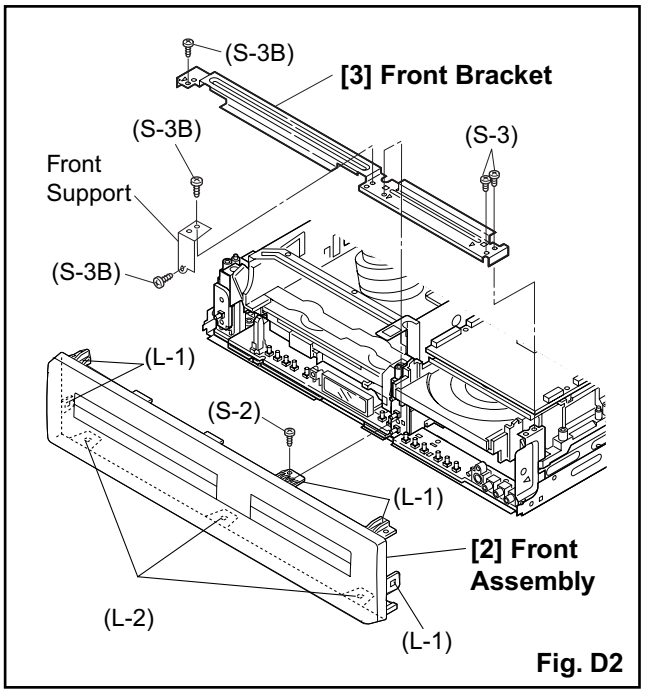


Fig. D2

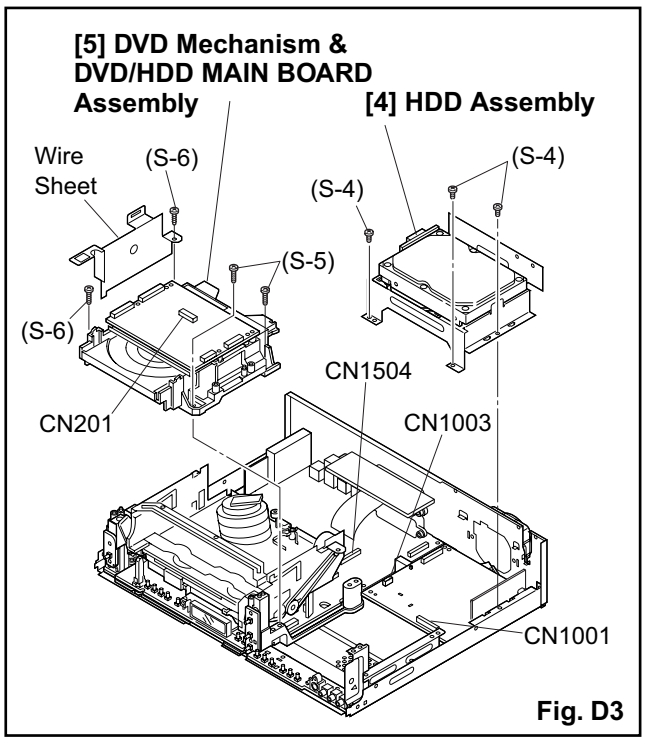


Fig. D3

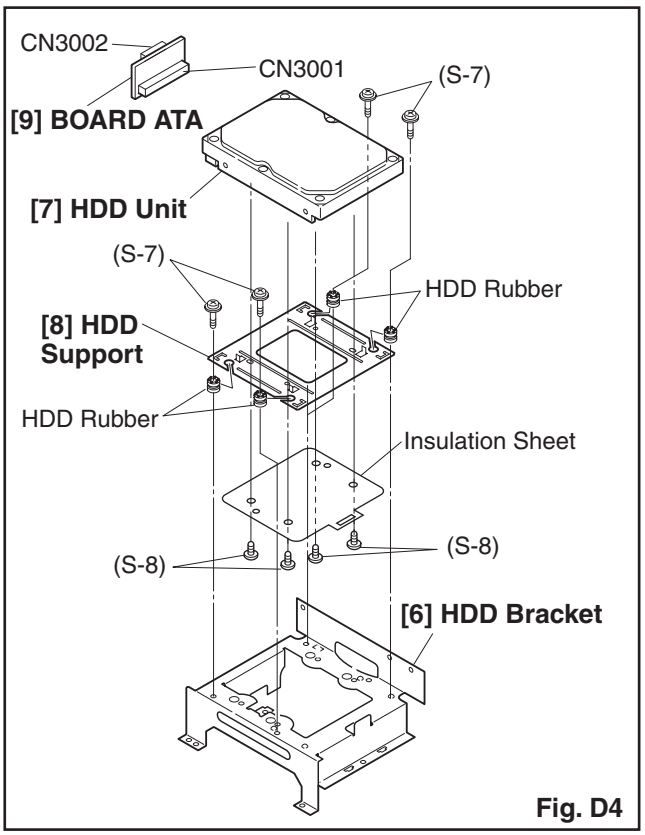


Fig. D4

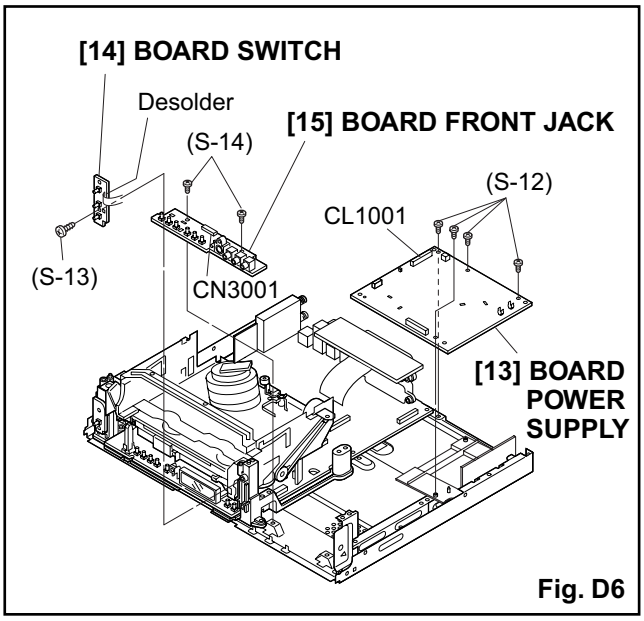


Fig. D6

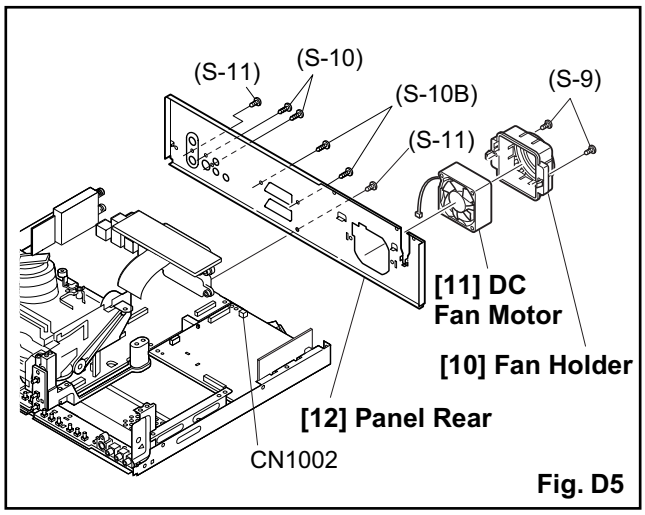


Fig. D5

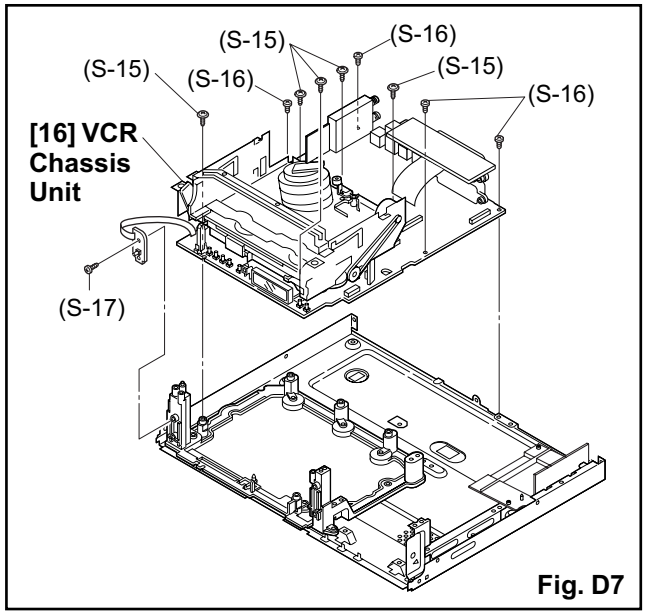
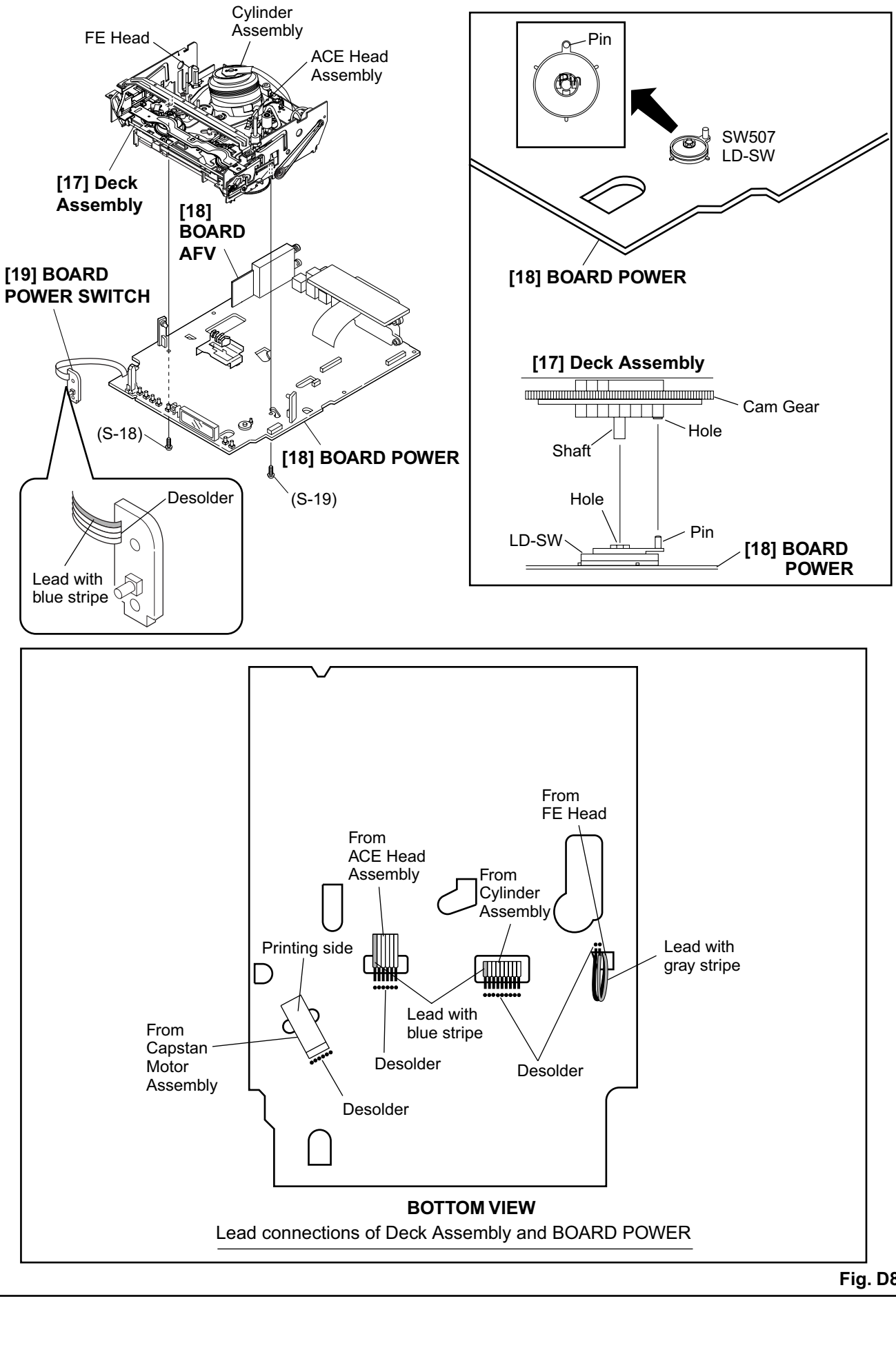


Fig. D7



Lead connections of Deck Assembly and BOARD POWER

Fig. D8

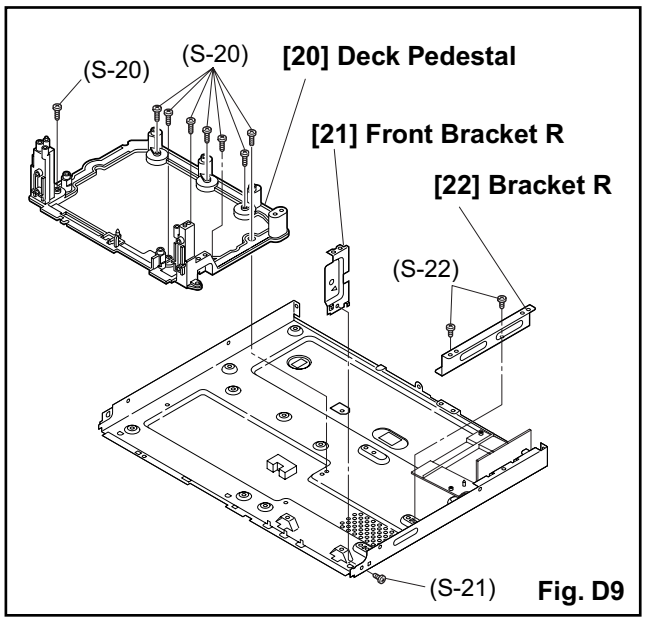
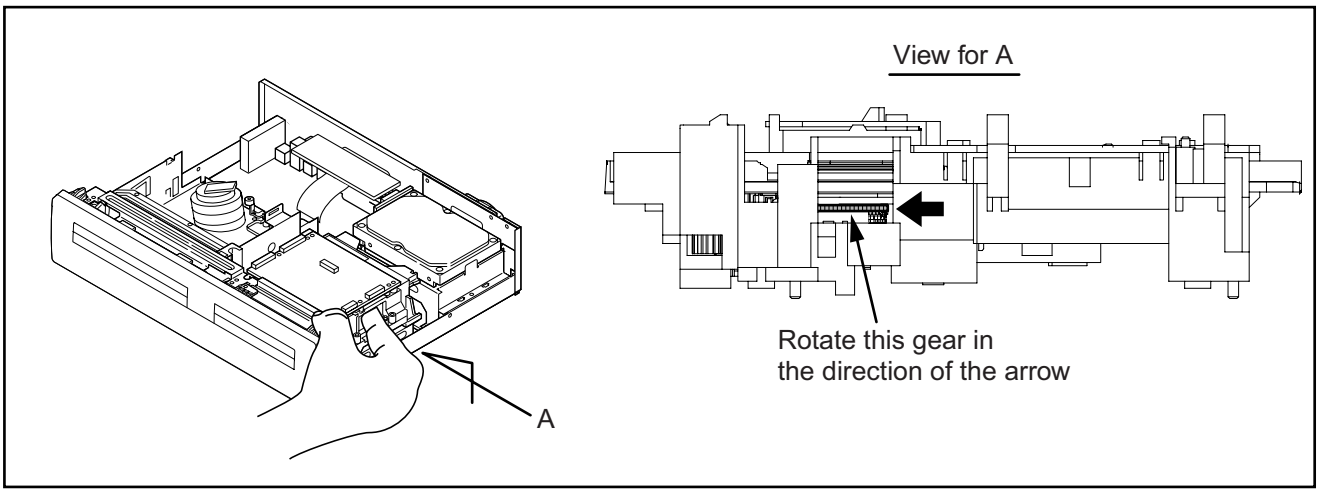


Fig. D9

3. How to Eject Manually

Note: When rotating the gear, be careful not to damage the gear.

1. Remove the Cover Top.
2. Rotate the gear in the direction of the arrow manually as shown below.



ELECTRICAL ADJUSTMENT INSTRUCTIONS

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

NOTE:

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either [PROGRAM ∨] or [PROGRAM ∧] button on the front panel first, then the [▷] (VCR) button on the front panel.

Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div.,
   F-Range: DC~AC-20MHz
2. Alignment Tape (FL6A)

Head Switching Position Adjustment

Purpose:

To determine the Head Switching position during playback.

Symptom of Misadjustment:

May cause Head Switching noise or vertical jitter in the picture.

Test point	Adj.Point	Mode	Input
J340(JK2-V-OUT) TP504(RF-SW) GND	VR501 (Switching Point) (BOARD POWER)	PLAY (SP)	-----
Tape	**Measurement Equipment**	**Spec.**	
FL6A	Oscilloscope	6.5H±1H (416μs±64μs)	

Connections of Measurement Equipment

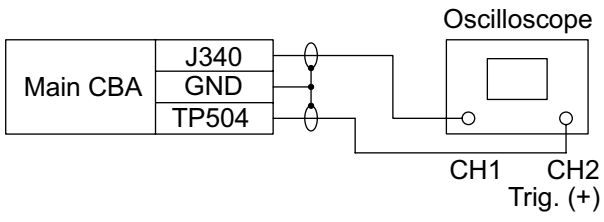
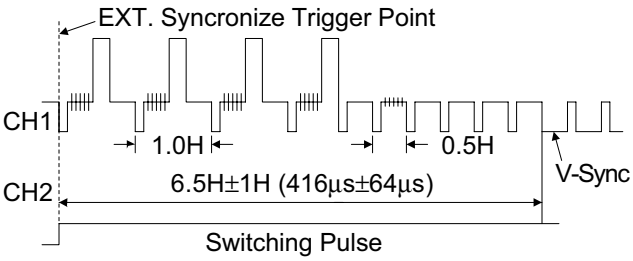


Figure 1



Reference Notes:

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H±1H (416μs±64μs) delayed position from the rising edge of the CH2 head switching pulse waveform.

HOW TO SELF-CHECK AND INITIALIZE THE HDD & DVD/VCR

1. Turn on the HDD & DVD/VCR.
2. To put the HDD & DVD/VCR into the HDD mode, press [HDD] on the remote control unit.
3. To put the HDD & DVD/VCR into the self-check mode, after pressing [VARIABLE SKIP] button, press the [3], [6], and [9] buttons on the remote control in that order within three seconds.
   Fig. a appears on the screen and all LEDs light.

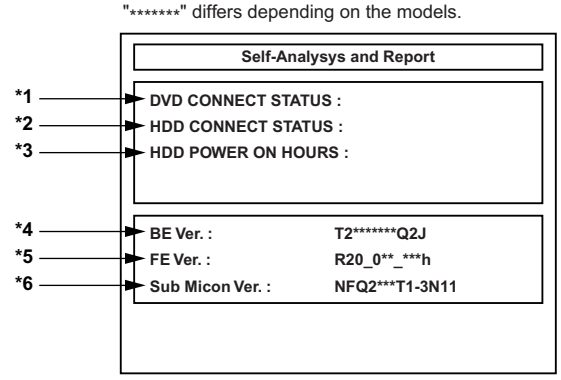


Fig. a: Self-Check Mode Screen

Table 1: Description of Fig. a

INDICATION	DESCRIPTION
DVD CONNECT STATUS (*1)	Connecting Condition of DVD(F/E)
HDD CONNECT STATUS (*2)	Connecting Condition of HDD
HDD POWER ON HOURS (*3)	Value of HDD power on hours obtained from S.M.A.R.T. command. (If not obtainable, value of HDD power on hours is “0”.) Value in parentheses is the factory setting value. (If no setting, the value is “0”.)
BE Ver. (*4)	B/E version
FE Ver. (*5)	F/E version
Sub Micon Ver. (*6)	Sub micro controller version

4. Upon the self-check completion, Fig. b appears on the screen.

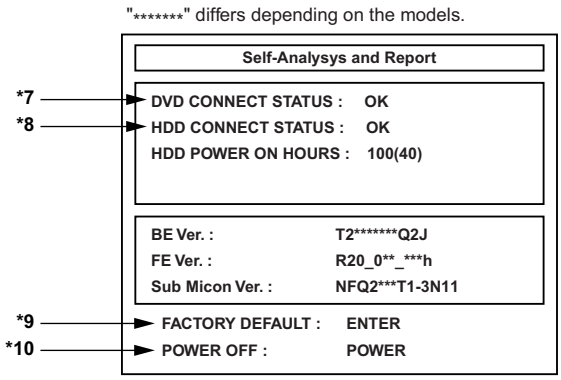


Fig. b: Screen of Finishing Self-Check Mode

Table 2: Indication of DVD self-check (*7)

INDICATION	DESCRIPTION
OK	Connection of DVD is normal.
NOT FOUND	DVD drive cannot be found.
CABLE ERROR	FFC cable (connecting to CN401) between the DVD drive and the DVD/HDD MAIN BOARD is not connected correctly.

Table 3: Indication of HDD self-check (*8)

INDICATION	DESCRIPTION
OK	Connection of HDD is normal.
NOT FOUND	HDD drive cannot be found.
CABLE ERROR	FFC cable between the BOARD ATA and the HDD drive is not connected correctly.

Table 4: Available button in self-check mode

BUTTON	DESCRIPTION
ENTER (*9)	Initialize (only when the self-check mode is complete)
ON / STANDBY (*10)	Turn the power off (when the self-check mode is complete)
OTHER	Not available

5. When the self-check mode is complete, press [I/⏻] button to turn the power off.
   When initializing the HDD & DVD/VCR, press [ENTER] button. Fig. c appears on the screen. After two seconds, the power is turned off automatically.

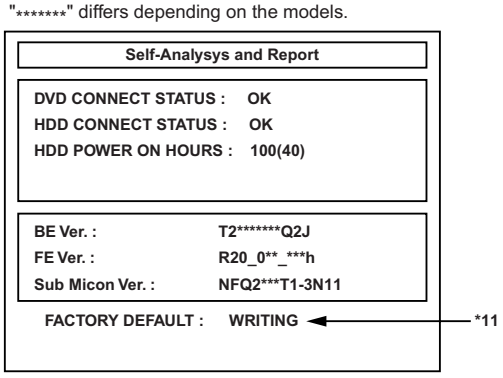

"*******" differs depending on the models.
Self-Analysys and Report
DVD CONNECT STATUS : OK
HDD CONNECT STATUS : OK
HDD POWER ON HOURS : 100(40)
BE Ver. : T2*******Q2J
FE Ver. : R20_0**_***h
Sub Micon Ver. : NFQ2***T1-3N11
FACTORY DEFAULT : WRITING
*11

Fig. c: Initialize Mode Screen

Table 5: Description of *11 in Fig. c

INDICATION	DESCRIPTION
ENTER	Initialization preparation is complete.
WRITING	Initializing
OK	Initializing is finished normally.
NG	Initializing is not finished normally.

NOTE: When initializing, “Current Clock”, “Setup Changing Item”, “Channel Setup”, “Area Setup”, “Program” and “HDD Contents” are initialized.

FIRMWARE RENEWAL MODE

1. Update Contents

	Item	Status
1	B/E	Update B/E FIRMWARE
2	F/E	Update F/E FIRMWARE

2. Update

1. Turn the power on and remove the disc in the tray.
2. To switch the HDD & DVD/VCR into the HDD mode, press [HDD] on the remote control unit.
3. To put the HDD & DVD/VCR into version up mode, press [VARIABLE SKIP] and [6], [5], [4] buttons on the remote control unit in that order within 3 seconds. The tray will open automatically.
   Fig. a appears on the TV screen and Fig. b appears on the VFD.

*FIRMWARE version will differ depending on the model. Fig. a is an example.

Fig. a: Update Mode TV Screen

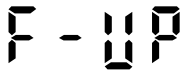


Fig. b: VFD Display in Update Mode

4. Load the update disc.
   The TV screen will display Fig. c.
   - If the update disc contains only a single file, the update will initiate automatically when the disc is inserted.

*FIRMWARE version will differ depending on the model. Fig. c is an example.

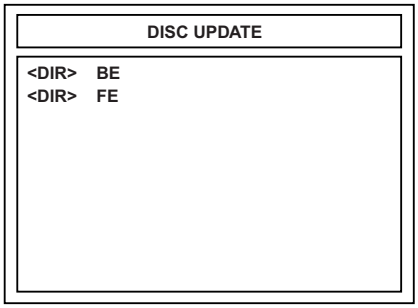


Fig. c: Update Disc TV Screen

Effective FIRMWARE update files will have the file extensions shown below.

File extension	Status
BIN	B/E FIRMWARE file
MOT	F/E FIRMWARE file

5. Select the desired FIRMWARE to be updated with the arrow button and press the [ENTER] button. FIRMWARE will automatically select the appropriate F/E or B/E version.
   Fig. d appears on the TV screen and Fig. e appears on the VFD, and the update will start.

*FIRMWARE version will differ depending on the model. Fig. d is an example.

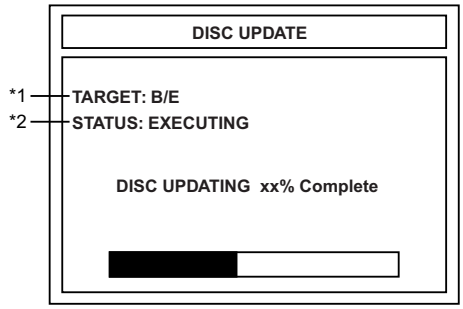


Fig. d: TV Display during update

The status displayed in *1 is as shown below.

Display	Status
B/E	FIRMWARE B/E
F/E	FIRMWARE F/E
UNKNOWN	Not FIRMWARE B/E or F/E

The status displayed in *2 is as shown below.

Display	Status
EXECUTING	Loading F/W from Update Disc or writing to Flash memory
OK	Update successful
ERROR	Error during Flash memory writing
FILE ERROR	Check SAM error in F/W file
READ ERROR	Error during F/W file reading

Fig. e: VFD Display during update

Re: the VFD display shown in Fig. e.

When the TV screen displays "Firmware Updating... XX% Complete," the VFD will indicate "XX"%.

6. When completing update, the tray will open automatically.
   The TV screen will display Fig. f.

*FIRMWARE version will differ depending on the model. Fig. f is an example.

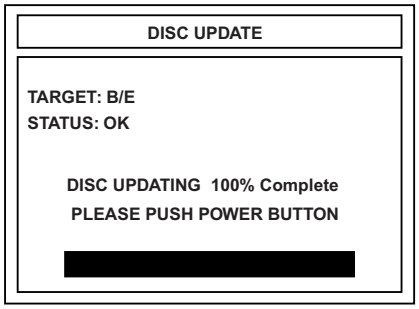


Fig. f: TV Display when completing update

If the update is completed correctly, the VFD will indicate Fig. g.

Fig. g: VFD Display when completing update

Fig. h: VFD Display when completing update with error

In this case, all button operations will be invalid except [I/⏻] button.

7. Press [I/⏻] button to turn the power off and press [I/⏻] button again to turn the power on and finish updating.

3. How to Verify the Firmware Version

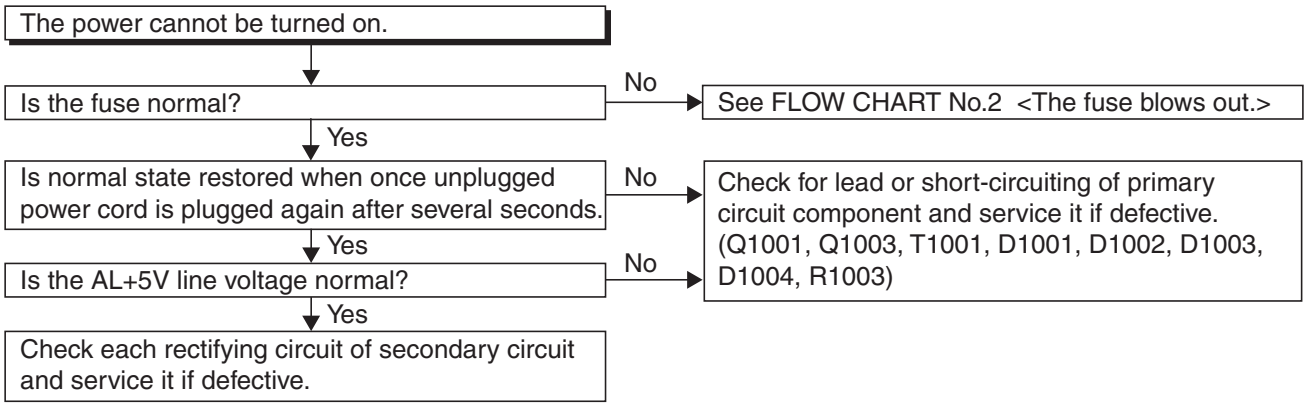
1. Turn the power on and remove the disc in the tray.
2. To switch the HDD & DVD/VCR into the HDD mode, press [HDD] on the remote control unit.
3. Press [VARIABLE SKIP] and [1], [2], [3] buttons on the remote control unit in that order within 3 seconds. The Firmware version appears on the TV screen.
4. Press [I/⏻] button to reset the unit.

TROUBLESHOOTING

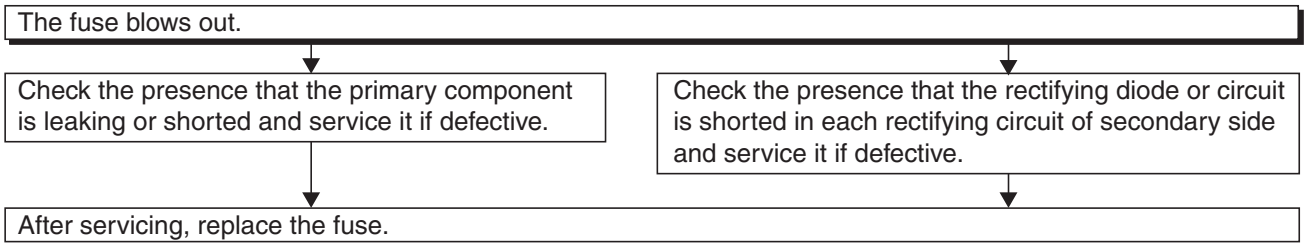
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

1 Power Supply Section

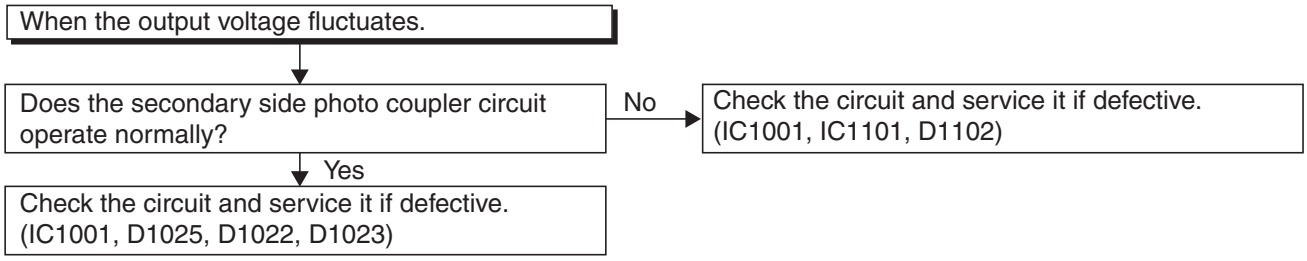
FLOW CHART NO.1


The power cannot be turned on.
Is the fuse normal?
No
See FLOW CHART No.2 <The fuse blows out.>
Yes
Is normal state restored when once unplugged power cord is plugged again after several seconds.
No
Check for lead or short-circuiting of primary circuit component and service it if defective. (Q1001, Q1003, T1001, D1001, D1002, D1003, D1004, R1003)
Yes
Is the AL+5V line voltage normal?
No
Yes
Check each rectifying circuit of secondary circuit and service it if defective.

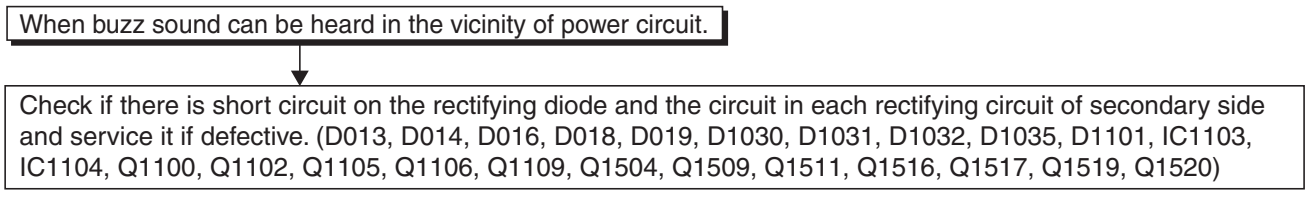
FLOW CHART NO.2


The fuse blows out.
Check the presence that the primary component is leaking or shorted and service it if defective.
Check the presence that the rectifying diode or circuit is shorted in each rectifying circuit of secondary side and service it if defective.
After servicing, replace the fuse.

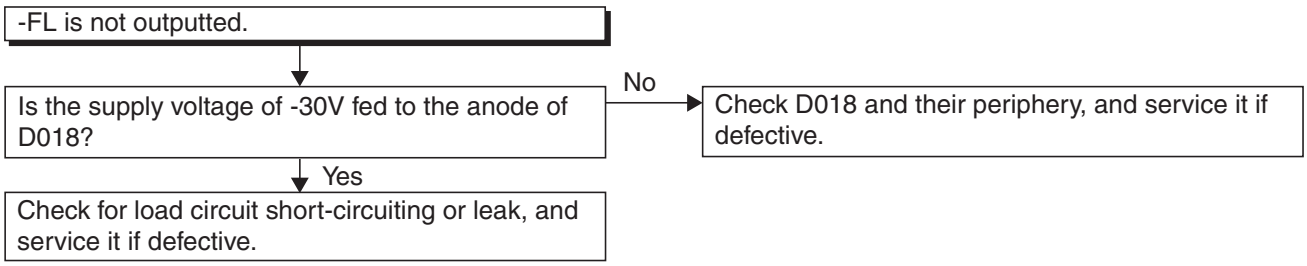
FLOW CHART NO.3


When the output voltage fluctuates.
Does the secondary side photo coupler circuit operate normally?
No
Check the circuit and service it if defective. (IC1001, IC1101, D1102)
Yes
Check the circuit and service it if defective. (IC1001, D1025, D1022, D1023)

FLOW CHART NO.4


When buzz sound can be heard in the vicinity of power circuit.
Check if there is short circuit on the rectifying diode and the circuit in each rectifying circuit of secondary side and service it if defective. (D013, D014, D016, D018, D019, D1030, D1031, D1032, D1035, D1101, IC1103, IC1104, Q1100, Q1102, Q1105, Q1106, Q1109, Q1504, Q1509, Q1511, Q1516, Q1517, Q1519, Q1520)

FLOW CHART NO.5


-FL is not outputted.
Is the supply voltage of -30V fed to the anode of D018?
No
Check D018 and their periphery, and service it if defective.
Yes
Check for load circuit short-circuiting or leak, and service it if defective.

FLOW CHART NO.6

EV+44V is not outputted.

Is 44V voltage supplied to the emitter of Q1509?
- No → Check D013, C013, and their periphery, and service it if defective.
- Yes ↓

Is the "L" pulse (approximately 0V) inputted to the base of Q1509?
- No → Is the "H" pulse (approximately 5V) inputted to the base of Q1510?
  - Yes → Replace Q1510.
  - No → Is 5V voltage supplied to the Pin(37,99) of IC501.
    - Yes → Replace IC501.
    - No → Check AL+5V line, and service it if defective.
- Yes ↓

Replace Q1509.

FLOW CHART NO.7

HDD+12V is not outputted.

Is 44V voltage supplied to the collector of Q1100?
- No → Check D017, D1031, D1035, C1037 and their periphery, and service it if defective.
- Yes ↓

Is the "H" pulse inputted to the base of Q1100?
- No → Is the "H" pulse inputted to the base of Q1104?
  - Yes → Is the "L" pulse outputted to the collector of Q1104?
    - No → Replace Q1104.
    - Yes ↓

    Is 37V voltage outputted to the collector of Q1101?
    - No → Replace Q1101.
    - Yes ↓

    Check IC1102 and their periphery, and service it if defective.
  - No → Is 3.3V voltage supplied to Pin(6, 7) of IC1504?
    - Yes → Replace IC501.
    - No → Check EV+3.3V, TIMER+5V line, Q1527, Q1528, D1525, and service it if defective.
- Yes ↓

Replace Q1100.

FLOW CHART NO.8

P-ON+9V is not outputted. (HDD+12V is outputted normally)

Is the "H" pulse (approximately 10V) inputted to the base of Q1105?
- No → Check D1120, R1138, R1159, and their periphery, and service it if defective.
- Yes ↓

Replace Q1105.

FLOW CHART NO.9

P-ON+5V is not outputted. (P-ON+9V is outputted normally)

Is 5V voltage supplied to the collector of Q1106?
- No → Check D016, D1032, D1102, C1104, C1105, and their periphery, and service it if defective.
- Yes ↓

Is the "H" pulse inputted to the base of Q1106?
- No → Check R1140 and their periphery, and service it if defective.
- Yes ↓

Replace Q1106.

FLOW CHART NO.10

HDD+5V is not outputted.

↓

Is 5V voltage supplied to the emitter of Q1102? — No → Check D016, D1032, D1102, C1104, C1105 and their periphery, and service it if defective.

↓ Yes

Is the "L" pulse outputted to the collector of Q1104? — No → Check Q1104, D1117 and their periphery, and service it if defective.

↓ Yes

Replace Q1102.

FLOW CHART NO.11

P-ON+2.5V is not outputted.

↓

Is 4V voltage supplied to Pin(1) of IC1103? — No → Check D1101, C1107, and their periphery, and service it if defective.

↓ Yes

Replace IC1103.

FLOW CHART NO.12

P-ON+3.3V is not outputted.

↓

Is 5V voltage supplied to Pin(1) of IC1104? — No → Check D1101, C1107, and their periphery, and service it if defective.

↓ Yes

Replace IC1104.

FLOW CHART NO.13

The fluorescent display tube does not light up.

↓

Is 3.3V voltage supplied to Pin(6, 24) of IC612? — No → Check the EV+3.3V line and service it if defective.

↓ Yes

Is approximately -24V to -28V voltage supplied to Pin(15) of IC612? — No → Check the -FL line and service it if defective.

↓ Yes

Is there approximately 500kHz oscillation to Pin(26) of IC612? — No → Check R621, IC612 and their periphery, and service it if defective.

↓ Yes

Are the filament voltage applied between Pin(1) and Pin(24) of the fluorescent display tube? Also negative voltage applied between these pins and GND? — No → Check the power circuit, D1103, D1108, R1106, C1110 and their periphery, and service it if defective.

↓ Yes

Replace the fluorescent display tube (FL601).

2 HDD/DVD Section

FLOW CHART NO.1

The key operation is not functioning.

↓

Are the contact point and the installation state of the key switches normal? — No → Re-install the key switches correctly or replace the poor switch.

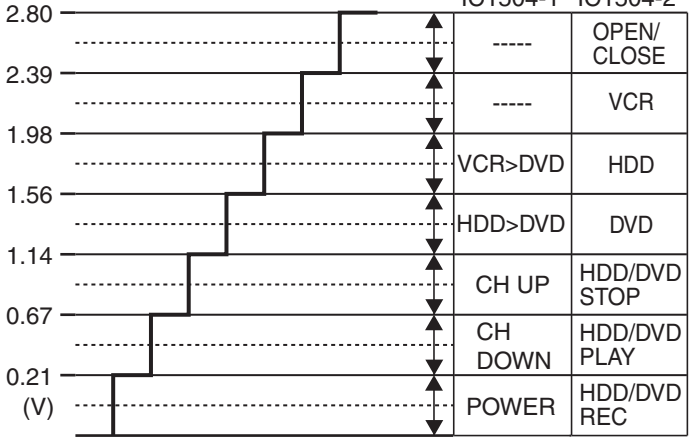
↓ Yes

Is the control voltage normally inputted into Pin(1,2) of IC1504? — No → Check the key switches and their periphery, and service it if defective.

↓ Yes

Replace IC1504 or DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.

Terminal voltage of IC1504-1,2



KEY-1 IC1504-1	KEY-2 IC1504-2
-----	OPEN/ CLOSE
-----	VCR
VCR>DVD	HDD
HDD>DVD	DVD
CH UP	HDD/DVD STOP
CH DOWN	HDD/DVD PLAY
POWER	HDD/DVD REC

FLOW CHART NO.2

No HDD/DVD operation is possible from the remote control unit. (Operation is possible from the unit.)

↓

Is 5V voltage supplied to Pin(3) terminal of the RM1501 (remote control receiver)? — No → Check AL+5V line, and service it if defective.

↓ Yes

Is the "L" pulse sent out from Pin(1) terminal of the RM1501 (remote control receiver) when the remote control unit is activated? — No → Replace the RM1501 (remote control receiver). Replace remote control unit if needed.

↓ Yes

Is the "L" pulse signal supplied to Pin(27) of IC1504? — No → Check the line between the RM1501 (remote control receiver) and Pin(27) of IC1504, and service it if defective.

↓ Yes

Replace IC1504 or DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.

FLOW CHART NO.3

The [No Disc] indication.

Both picture and sound do not operate normally.

↓

Replace the DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.

FLOW CHART NO.4

VIDEO E-E does not appear normally.

Are the video signals inputted to each pin of IC1506?

IC1506	16PIN	VIDEO-IN 1 (AV1)
IC1506	14PIN	VIDEO-IN (FRONT)
IC1506	7PIN	Y-IN 1 (FRONT)
IC1506	9PIN	C-IN 1 (FRONT)
IC1506	12PIN	VIDEO-IN 2 (AV2)
IC1506	20PIN	TUNER-VIDEO

No → Check the line between video input terminal and each pin of IC1506.

IC1506	16PIN → JK1504	VIDEO-IN 1 (AV1)
IC1506	14PIN → JK3001	VIDEO-IN (FRONT)
IC1506	7PIN → IC3001	Y-IN 1 (FRONT)
IC1506	9PIN → IC3001	C-IN 1 (FRONT)
IC1506	12PIN → JK2001	VIDEO-IN 2 (AV2)
IC1506	20PIN → TU1501 17PIN	TUNER-VIDEO

Yes

Are the video signals outputted to each pin of IC1506?

IC1506	61PIN	VIDEO-Y/CVBS-IN
IC1506	59PIN	VIDEO-C-IN

No → Is 5V voltage supplied to Pin(27,29,47,63) of IC1506?
Is 9V voltage supplied to Pin(75) of IC1506?

Yes → Replace IC1506.

No → Check the AL+5V(2) , AL+9V line and service it if defective.

Yes

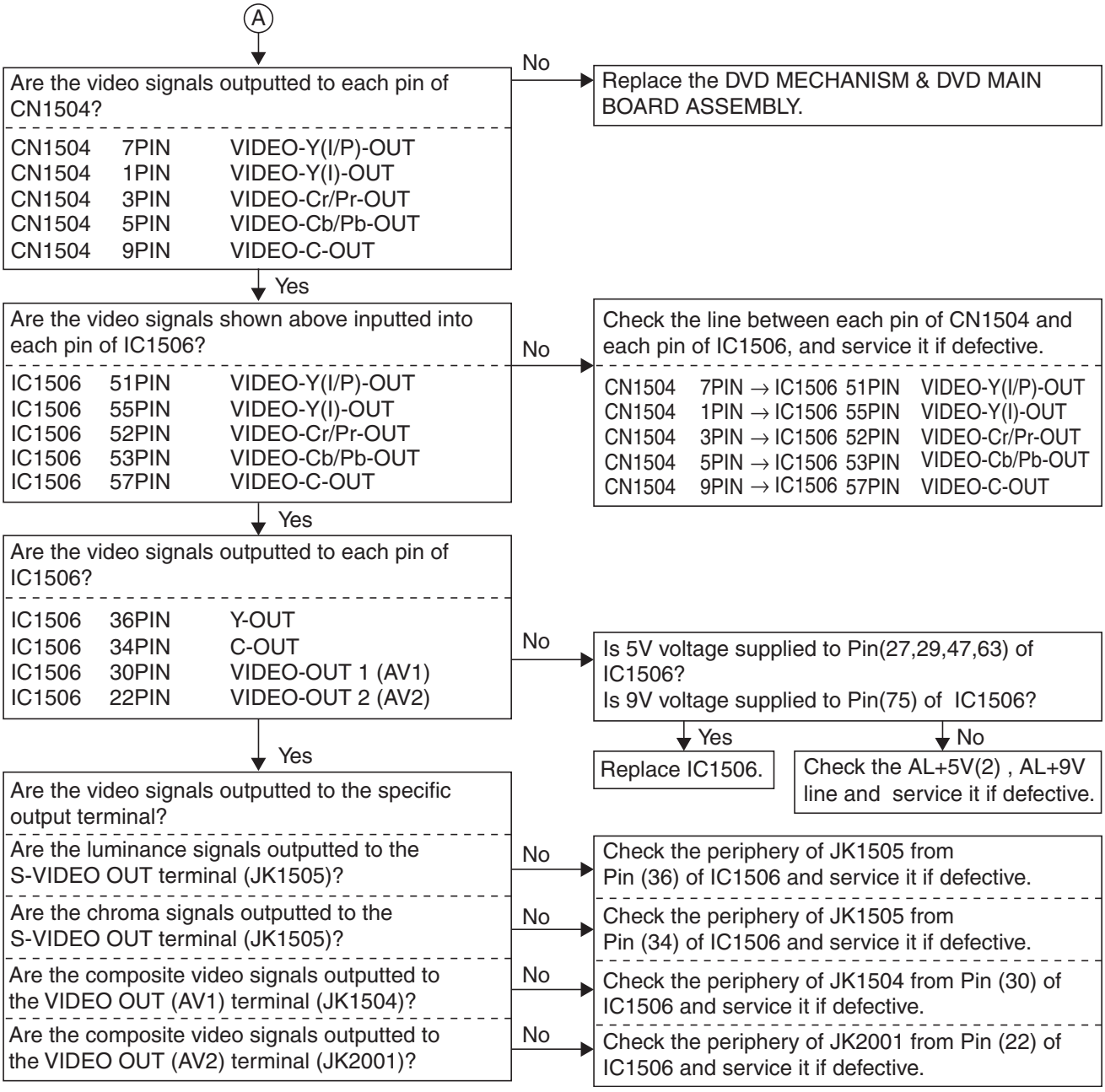
Are the video signals outputted to each pin of CN1504?

CN1504	21PIN	VIDEO-Y/CVBS-IN
CN1504	23PIN	VIDEO-C-IN

No → Check the line between each pin of IC1506 and each pin of CN1504 and service it if defective.

IC1506 61PIN → CN1504	21PIN	VIDEO-Y/CVBS-IN
IC1506 59PIN → CN1504	23PIN	VIDEO-C-IN

Continued to (A) on the next page.


A
Are the video signals outputted to each pin of CN1504?
CN1504 7PIN VIDEO-Y(I/P)-OUT
CN1504 1PIN VIDEO-Y(I)-OUT
CN1504 3PIN VIDEO-Cr/Pr-OUT
CN1504 5PIN VIDEO-Cb/Pb-OUT
CN1504 9PIN VIDEO-C-OUT
No
Replace the DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
Yes
Are the video signals shown above inputted into each pin of IC1506?
IC1506 51PIN VIDEO-Y(I/P)-OUT
IC1506 55PIN VIDEO-Y(I)-OUT
IC1506 52PIN VIDEO-Cr/Pr-OUT
IC1506 53PIN VIDEO-Cb/Pb-OUT
IC1506 57PIN VIDEO-C-OUT
No
Check the line between each pin of CN1504 and each pin of IC1506, and service it if defective.
CN1504 7PIN → IC1506 51PIN VIDEO-Y(I/P)-OUT
CN1504 1PIN → IC1506 55PIN VIDEO-Y(I)-OUT
CN1504 3PIN → IC1506 52PIN VIDEO-Cr/Pr-OUT
CN1504 5PIN → IC1506 53PIN VIDEO-Cb/Pb-OUT
CN1504 9PIN → IC1506 57PIN VIDEO-C-OUT
Yes
Are the video signals outputted to each pin of IC1506?
IC1506 36PIN Y-OUT
IC1506 34PIN C-OUT
IC1506 30PIN VIDEO-OUT 1 (AV1)
IC1506 22PIN VIDEO-OUT 2 (AV2)
No
Is 5V voltage supplied to Pin(27,29,47,63) of IC1506?
Is 9V voltage supplied to Pin(75) of IC1506?
Yes
Replace IC1506.
No
Check the AL+5V(2) , AL+9V line and service it if defective.
Yes
Are the video signals outputted to the specific output terminal?
Are the luminance signals outputted to the S-VIDEO OUT terminal (JK1505)?
No
Check the periphery of JK1505 from Pin (36) of IC1506 and service it if defective.
Are the chroma signals outputted to the S-VIDEO OUT terminal (JK1505)?
No
Check the periphery of JK1505 from Pin (34) of IC1506 and service it if defective.
Are the composite video signals outputted to the VIDEO OUT (AV1) terminal (JK1504)?
No
Check the periphery of JK1504 from Pin (30) of IC1506 and service it if defective.
Are the composite video signals outputted to the VIDEO OUT (AV2) terminal (JK2001)?
No
Check the periphery of JK2001 from Pin (22) of IC1506 and service it if defective.

FLOW CHART NO.5

Picture does not appear normally.

↓

Set the disc on the disc tray, and playback it. (DVD MODE)
Or, playback by selecting the picture in HDD top menu. (HDD MODE)

↓

Are the video signals outputted to each pin of CN1504?

CN1504	7PIN	VIDEO-Y(I/P)-OUT
CN1504	1PIN	VIDEO-Y(I)-OUT
CN1504	3PIN	VIDEO-Cr/Pr-OUT
CN1504	5PIN	VIDEO-Cb/Pb-OUT
CN1504	9PIN	VIDEO-C-OUT

No → Replace the DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.

↓ Yes

Are the video signals shown above inputted into each pin of IC1506?

IC1506	51PIN	VIDEO-Y(I/P)-OUT
IC1506	55PIN	VIDEO-Y(I)-OUT
IC1506	52PIN	VIDEO-Cr/Pr-OUT
IC1506	53PIN	VIDEO-Cb/Pb-OUT
IC1506	57PIN	VIDEO-C-OUT

No → Check the line between each pin of CN1504 and each pin of IC1506, and service it if defective.

CN1504	7PIN → IC1506	51PIN	VIDEO-Y(I/P)-OUT
CN1504	1PIN → IC1506	55PIN	VIDEO-Y(I)-OUT
CN1504	3PIN → IC1506	52PIN	VIDEO-Cr/Pr-OUT
CN1504	5PIN → IC1506	53PIN	VIDEO-Cb/Pb-OUT
CN1504	9PIN → IC1506	57PIN	VIDEO-C-OUT

↓ Yes

Are the video signals outputted to each pin of IC1506?

IC1506	36PIN	Y-OUT
IC1506	34PIN	C-OUT
IC1506	30PIN	VIDEO-OUT 1 (AV1)
IC1506	22PIN	VIDEO-OUT 2 (AV2)

No → Is 5V voltage supplied to Pin(27,29,47,63) of IC1506?
Is 9V voltage supplied to Pin(75) of IC1506?

Yes → Replace IC1506.

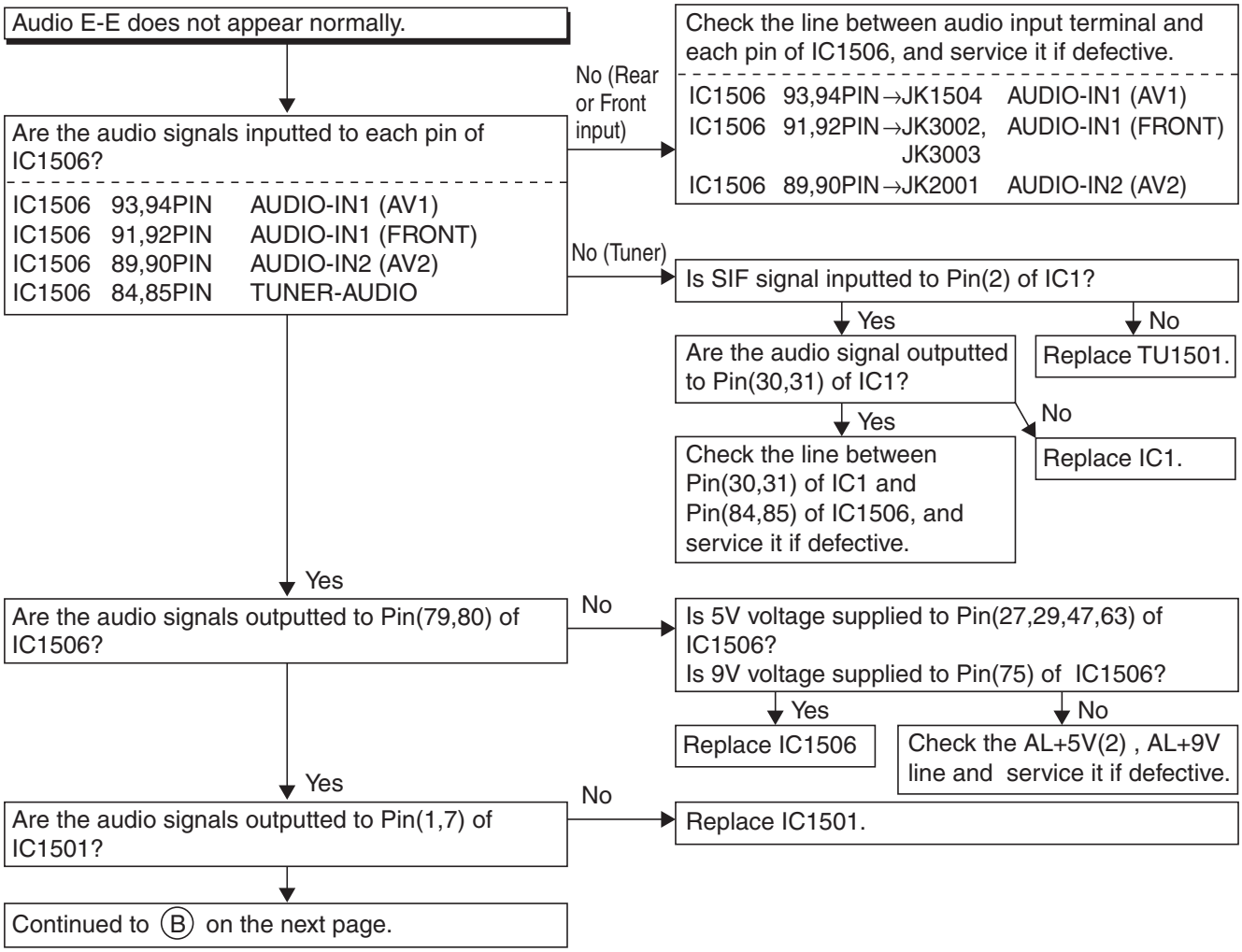
No → Check the AL+5V(2) , AL+9V line and service it if defective.

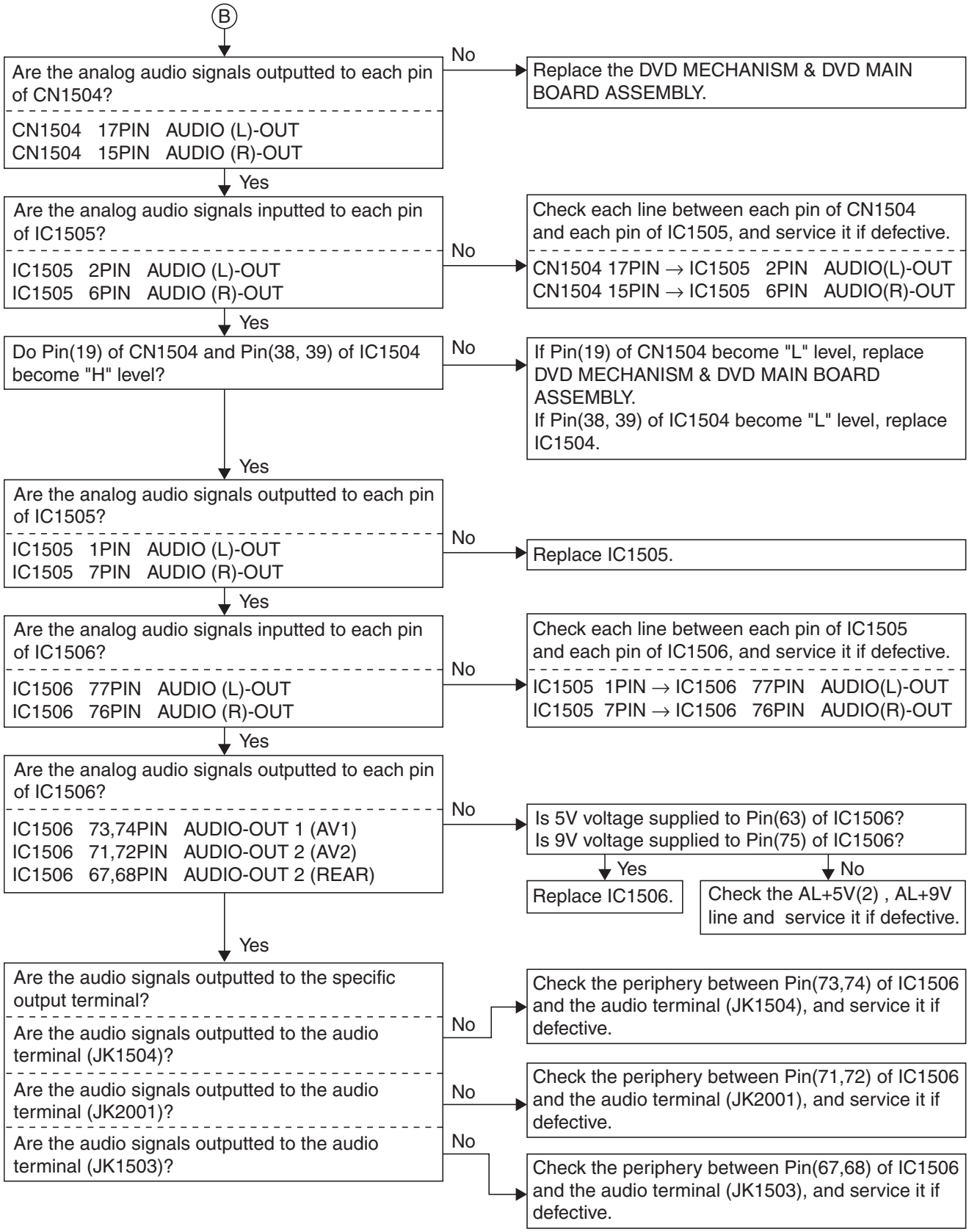
↓ Yes

Are the video signals outputted to the specific output terminal?

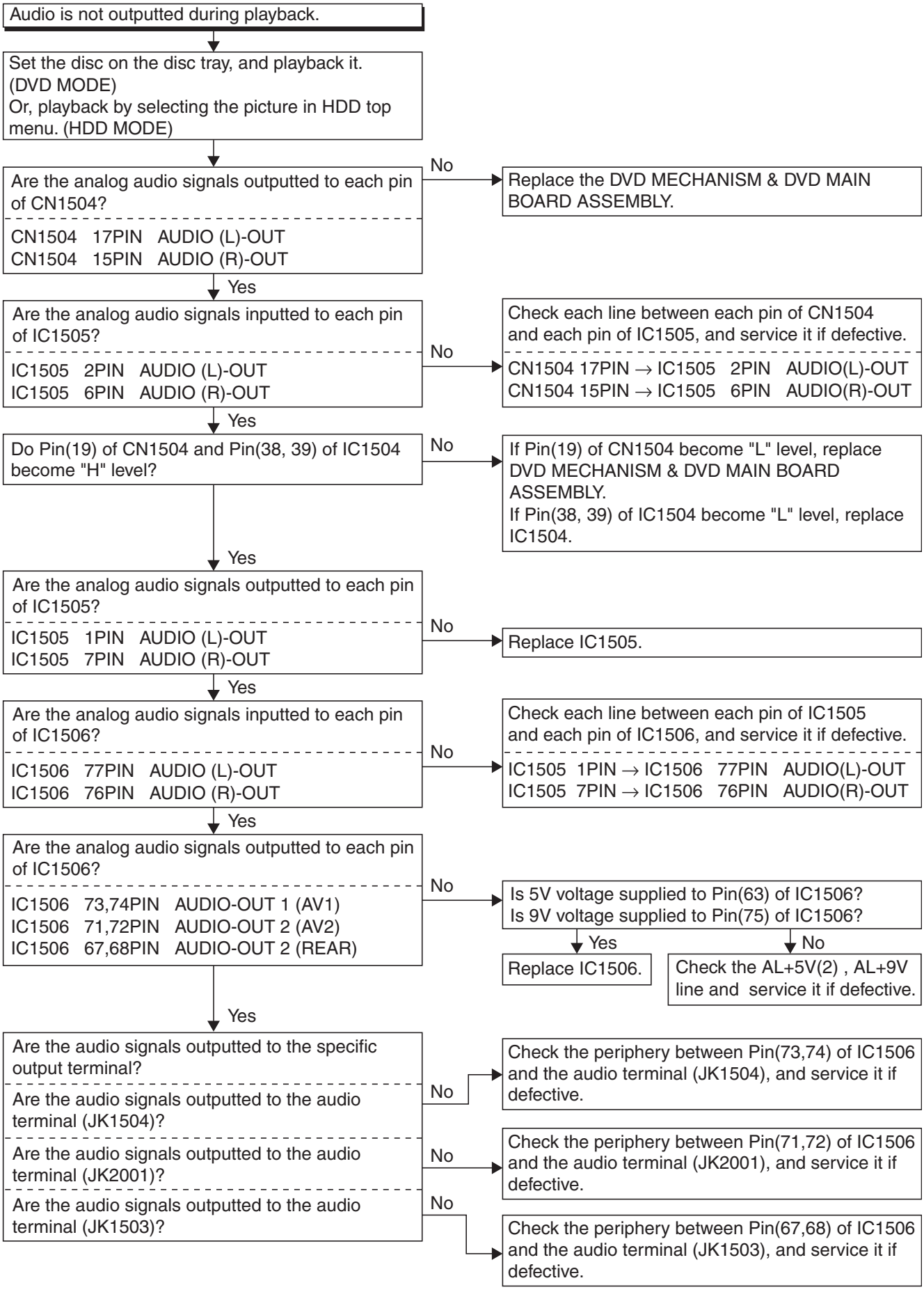
Are the luminance signals outputted to the S-VIDEO OUT terminal (JK1505)?	No → Check the periphery of JK1505 from Pin (36) of IC1506 and service it if defective.
Are the chroma signals outputted to the S-VIDEO OUT terminal (JK1505)?	No → Check the periphery of JK1505 from Pin (34) of IC1506 and service it if defective.
Are the composite video signals outputted to the VIDEO OUT (AV1) terminal (JK1504)?	No → Check the periphery of JK1504 from Pin (30) of IC1506 and service it if defective.
Are the composite video signals outputted to the VIDEO OUT (AV2) terminal (JK2001)?	No → Check the periphery of JK2001 from Pin (22) of IC1506 and service it if defective.

FLOW CHART NO.6


Audio E-E does not appear normally.
Are the audio signals inputted to each pin of IC1506?
IC1506 93,94PIN AUDIO-IN1 (AV1)
IC1506 91,92PIN AUDIO-IN1 (FRONT)
IC1506 89,90PIN AUDIO-IN2 (AV2)
IC1506 84,85PIN TUNER-AUDIO
No (Rear or Front input)
Check the line between audio input terminal and each pin of IC1506, and service it if defective.
IC1506 93,94PIN→JK1504 AUDIO-IN1 (AV1)
IC1506 91,92PIN→JK3002, JK3003 AUDIO-IN1 (FRONT)
IC1506 89,90PIN→JK2001 AUDIO-IN2 (AV2)
No (Tuner)
Is SIF signal inputted to Pin(2) of IC1?
Yes
No
Replace TU1501.
Are the audio signal outputted to Pin(30,31) of IC1?
Yes
No
Replace IC1.
Check the line between Pin(30,31) of IC1 and Pin(84,85) of IC1506, and service it if defective.
Yes
Are the audio signals outputted to Pin(79,80) of IC1506?
No
Is 5V voltage supplied to Pin(27,29,47,63) of IC1506?
Is 9V voltage supplied to Pin(75) of IC1506?
Yes
No
Replace IC1506
Check the AL+5V(2) , AL+9V line and service it if defective.
Yes
Are the audio signals outputted to Pin(1,7) of IC1501?
No
Replace IC1501.
Continued to Ⓑ on the next page.


B
Are the analog audio signals outputted to each pin of CN1504?
CN1504 17PIN AUDIO (L)-OUT
CN1504 15PIN AUDIO (R)-OUT
No
Replace the DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
Yes
Are the analog audio signals inputted to each pin of IC1505?
IC1505 2PIN AUDIO (L)-OUT
IC1505 6PIN AUDIO (R)-OUT
No
Check each line between each pin of CN1504 and each pin of IC1505, and service it if defective.
CN1504 17PIN → IC1505 2PIN AUDIO(L)-OUT
CN1504 15PIN → IC1505 6PIN AUDIO(R)-OUT
Yes
Do Pin(19) of CN1504 and Pin(38, 39) of IC1504 become "H" level?
No
If Pin(19) of CN1504 become "L" level, replace DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
If Pin(38, 39) of IC1504 become "L" level, replace IC1504.
Yes
Are the analog audio signals outputted to each pin of IC1505?
IC1505 1PIN AUDIO (L)-OUT
IC1505 7PIN AUDIO (R)-OUT
No
Replace IC1505.
Yes
Are the analog audio signals inputted to each pin of IC1506?
IC1506 77PIN AUDIO (L)-OUT
IC1506 76PIN AUDIO (R)-OUT
No
Check each line between each pin of IC1505 and each pin of IC1506, and service it if defective.
IC1505 1PIN → IC1506 77PIN AUDIO(L)-OUT
IC1505 7PIN → IC1506 76PIN AUDIO(R)-OUT
Yes
Are the analog audio signals outputted to each pin of IC1506?
IC1506 73,74PIN AUDIO-OUT 1 (AV1)
IC1506 71,72PIN AUDIO-OUT 2 (AV2)
IC1506 67,68PIN AUDIO-OUT 2 (REAR)
No
Is 5V voltage supplied to Pin(63) of IC1506?
Is 9V voltage supplied to Pin(75) of IC1506?
Yes
Replace IC1506.
No
Check the AL+5V(2) , AL+9V line and service it if defective.
Yes
Are the audio signals outputted to the specific output terminal?
Are the audio signals outputted to the audio terminal (JK1504)?
No
Check the periphery between Pin(73,74) of IC1506 and the audio terminal (JK1504), and service it if defective.
Are the audio signals outputted to the audio terminal (JK2001)?
No
Check the periphery between Pin(71,72) of IC1506 and the audio terminal (JK2001), and service it if defective.
Are the audio signals outputted to the audio terminal (JK1503)?
No
Check the periphery between Pin(67,68) of IC1506 and the audio terminal (JK1503), and service it if defective.

FLOW CHART NO.7


Audio is not outputted during playback.
Set the disc on the disc tray, and playback it. (DVD MODE) Or, playback by selecting the picture in HDD top menu. (HDD MODE)
Are the analog audio signals outputted to each pin of CN1504?
CN1504 17PIN AUDIO (L)-OUT
CN1504 15PIN AUDIO (R)-OUT
No
Replace the DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
Yes
Are the analog audio signals inputted to each pin of IC1505?
IC1505 2PIN AUDIO (L)-OUT
IC1505 6PIN AUDIO (R)-OUT
No
Check each line between each pin of CN1504 and each pin of IC1505, and service it if defective.
CN1504 17PIN → IC1505 2PIN AUDIO(L)-OUT
CN1504 15PIN → IC1505 6PIN AUDIO(R)-OUT
Yes
Do Pin(19) of CN1504 and Pin(38, 39) of IC1504 become "H" level?
No
If Pin(19) of CN1504 become "L" level, replace DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
If Pin(38, 39) of IC1504 become "L" level, replace IC1504.
Yes
Are the analog audio signals outputted to each pin of IC1505?
IC1505 1PIN AUDIO (L)-OUT
IC1505 7PIN AUDIO (R)-OUT
No
Replace IC1505.
Yes
Are the analog audio signals inputted to each pin of IC1506?
IC1506 77PIN AUDIO (L)-OUT
IC1506 76PIN AUDIO (R)-OUT
No
Check each line between each pin of IC1505 and each pin of IC1506, and service it if defective.
IC1505 1PIN → IC1506 77PIN AUDIO(L)-OUT
IC1505 7PIN → IC1506 76PIN AUDIO(R)-OUT
Yes
Are the analog audio signals outputted to each pin of IC1506?
IC1506 73,74PIN AUDIO-OUT 1 (AV1)
IC1506 71,72PIN AUDIO-OUT 2 (AV2)
IC1506 67,68PIN AUDIO-OUT 2 (REAR)
No
Is 5V voltage supplied to Pin(63) of IC1506?
Is 9V voltage supplied to Pin(75) of IC1506?
Yes
Replace IC1506.
No
Check the AL+5V(2) , AL+9V line and service it if defective.
Yes
Are the audio signals outputted to the specific output terminal?
Are the audio signals outputted to the audio terminal (JK1504)?
No
Check the periphery between Pin(73,74) of IC1506 and the audio terminal (JK1504), and service it if defective.
Are the audio signals outputted to the audio terminal (JK2001)?
No
Check the periphery between Pin(71,72) of IC1506 and the audio terminal (JK2001), and service it if defective.
Are the audio signals outputted to the audio terminal (JK1503)?
No
Check the periphery between Pin(67,68) of IC1506 and the audio terminal (JK1503), and service it if defective.

3 VCR Section

FLOW CHART NO.1

The key operation is not functioning.

↓

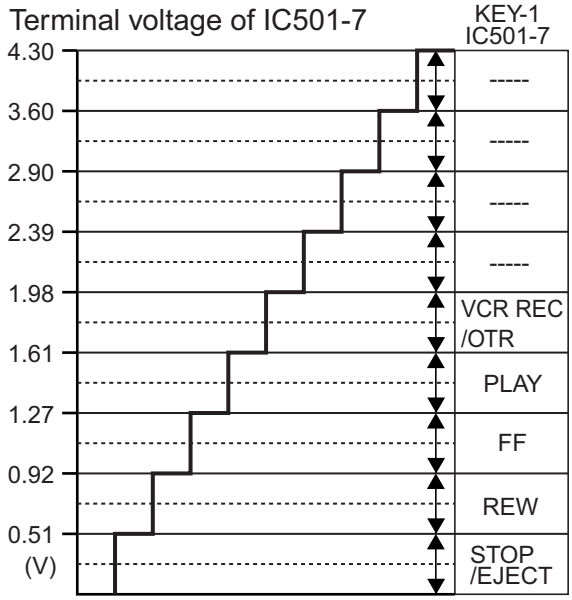
Are the contact point and the installation state of the key switches normal? — No → Re-install some key switches correctly or replace some key switches.

↓ Yes

Is the control voltage normally inputted into Pin(7) of IC501? — No → Check the key switches and their periphery, and service it if defective.

↓ Yes

Replace IC501.



FLOW CHART NO.2

No VCR operation is possible from the remote control unit. (Operation is possible from the unit.)

↓

Is 5V voltage supplied to the Pin(3) terminal of the RM1501 (remote control receiver)? — No → Check AL+5V line and service it if defective.

↓ Yes

Is the "L" pulse sent out from Pin(1) terminal of the RM1501 (remote control receiver) when the remote control unit is activated? — No → Replace the RM1501 (remote control receiver). Replace remote control unit if need.

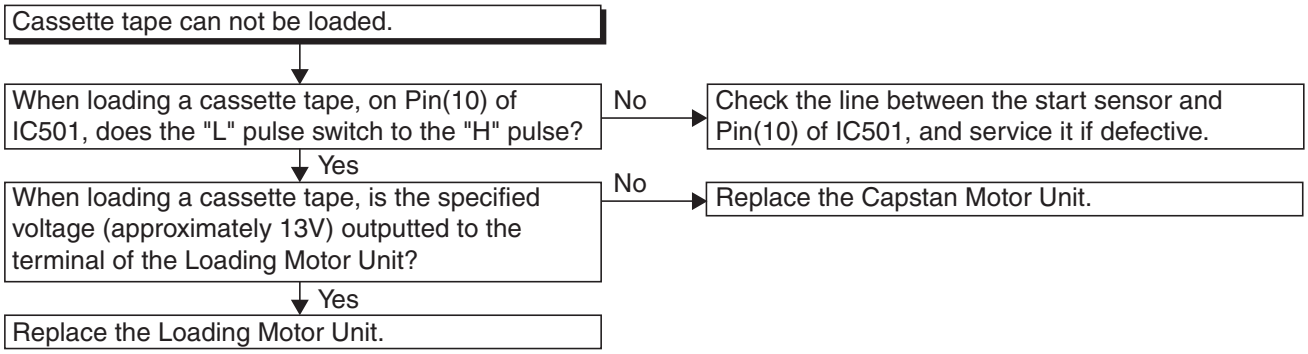
↓ Yes

Is the "L" pulse signal supplied to Pin(14) of IC501? — No → Check the line between the RM1501 (remote control receiver) and Pin(14) of IC501, and service it if defective.

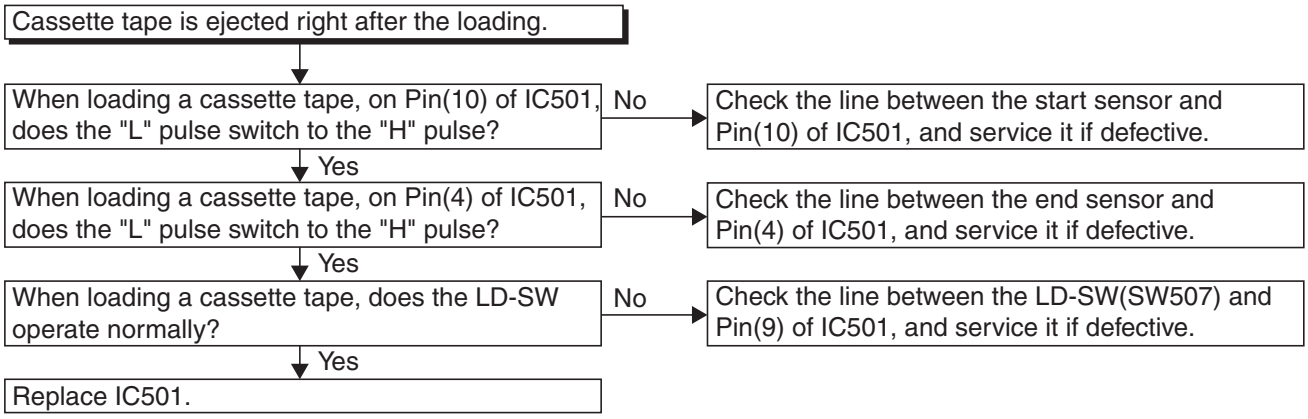
↓ Yes

Replace IC501.

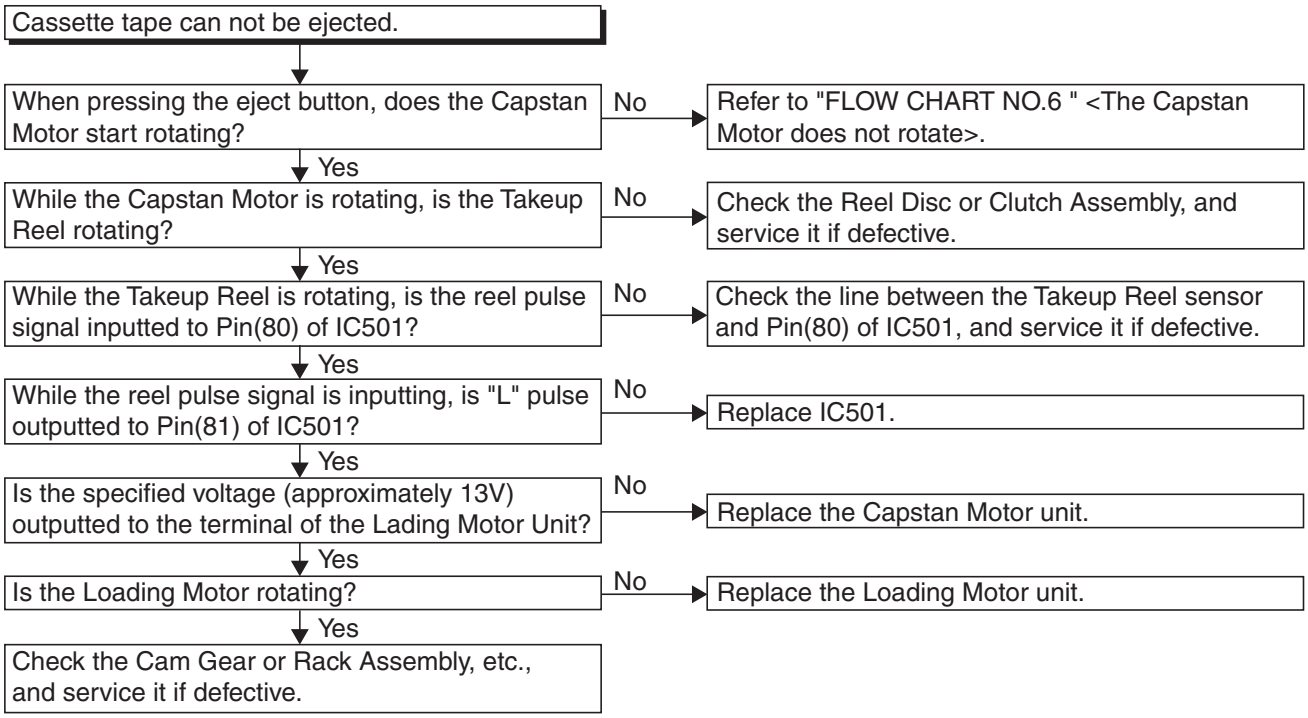
FLOW CHART NO.3


Cassette tape can not be loaded.
When loading a cassette tape, on Pin(10) of IC501, does the "L" pulse switch to the "H" pulse?
No
Check the line between the start sensor and Pin(10) of IC501, and service it if defective.
Yes
When loading a cassette tape, is the specified voltage (approximately 13V) outputted to the terminal of the Loading Motor Unit?
No
Replace the Capstan Motor Unit.
Yes
Replace the Loading Motor Unit.

FLOW CHART NO.4


Cassette tape is ejected right after the loading.
When loading a cassette tape, on Pin(10) of IC501, does the "L" pulse switch to the "H" pulse?
No
Check the line between the start sensor and Pin(10) of IC501, and service it if defective.
Yes
When loading a cassette tape, on Pin(4) of IC501, does the "L" pulse switch to the "H" pulse?
No
Check the line between the end sensor and Pin(4) of IC501, and service it if defective.
Yes
When loading a cassette tape, does the LD-SW operate normally?
No
Check the line between the LD-SW(SW507) and Pin(9) of IC501, and service it if defective.
Yes
Replace IC501.

FLOW CHART NO.5


Cassette tape can not be ejected.
When pressing the eject button, does the Capstan Motor start rotating?
No
Refer to "FLOW CHART NO.6 " <The Capstan Motor does not rotate>.
Yes
While the Capstan Motor is rotating, is the Takeup Reel rotating?
No
Check the Reel Disc or Clutch Assembly, and service it if defective.
Yes
While the Takeup Reel is rotating, is the reel pulse signal inputted to Pin(80) of IC501?
No
Check the line between the Takeup Reel sensor and Pin(80) of IC501, and service it if defective.
Yes
While the reel pulse signal is inputting, is "L" pulse outputted to Pin(81) of IC501?
No
Replace IC501.
Yes
Is the specified voltage (approximately 13V) outputted to the terminal of the Lading Motor Unit?
No
Replace the Capstan Motor unit.
Yes
Is the Loading Motor rotating?
No
Replace the Loading Motor unit.
Yes
Check the Cam Gear or Rack Assembly, etc., and service it if defective.

FLOW CHART NO.6

Capstan Motor does not rotate.

↓

Is 5V voltage supplied to Pin(2) of CN502? — No → Check the P-ON+5V line and service it if defective.

↓ Yes

Is over approximately 2.6V voltage supplied to Pin(5) of CN502? — No → Check the line between Pin(5) of CN502 and Pin(76) of IC501, and service it if defective.

↓ Yes

Is 12V voltage supplied to Pin(1,11) of CN502? — No → Check the AL+12V and AL+16V/+12V line, and service it if defective.

↓ Yes

Replace the Capstan Motor Unit.

FLOW CHART NO.7

Drum Motor does not rotate.

↓

Is 5V voltage supplied to Pin(2) of CN502? — No → Check the P-ON+5V line and service it if defective.

↓ Yes

Is over approximately 2.6V voltage supplied to Pin(8) of CN502? — No → Check the line between Pin(8) of CN502 and Pin(77) of IC501, and service it if defective.

↓ Yes

Is 12V voltage supplied at Pin(1,11) of CN502? — No → Check the AL+12V and AL+16V/+12V line, and service it if defective.

↓ Yes

Replace the Capstan Motor Unit or Cylinder Assembly.

FLOW CHART NO.8

Drum Motor rotates only for a few seconds.

↓

Is the drum PG/FG signal inputted to Pin(90) of IC501? — No → Replace the Capstan Motor Unit or the Cylinder Assembly.

↓ Yes

Is the RF-SW signal outputted to Pin(18) of IC501? — No → Replace IC501.

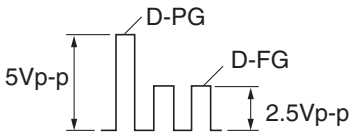
↓ Yes

Is 12V voltage supplied Pin(1,11) of CN 502? — No → Check the AL+12V and AL+16V/+12V line, and service it if defective.

↓ Yes

Replace the Capstan Motor Unit or the Cylinder Assembly.

FLOW CHART NO.9



RF-SW signal is not outputted.

↓

Is the Drum Motor rotating? — No → Refer to "FLOW CHART NO.7" <Drum Motor does not rotate> and "FLOW CHART NO.8" <Drum Motor rotates only for a few seconds>.

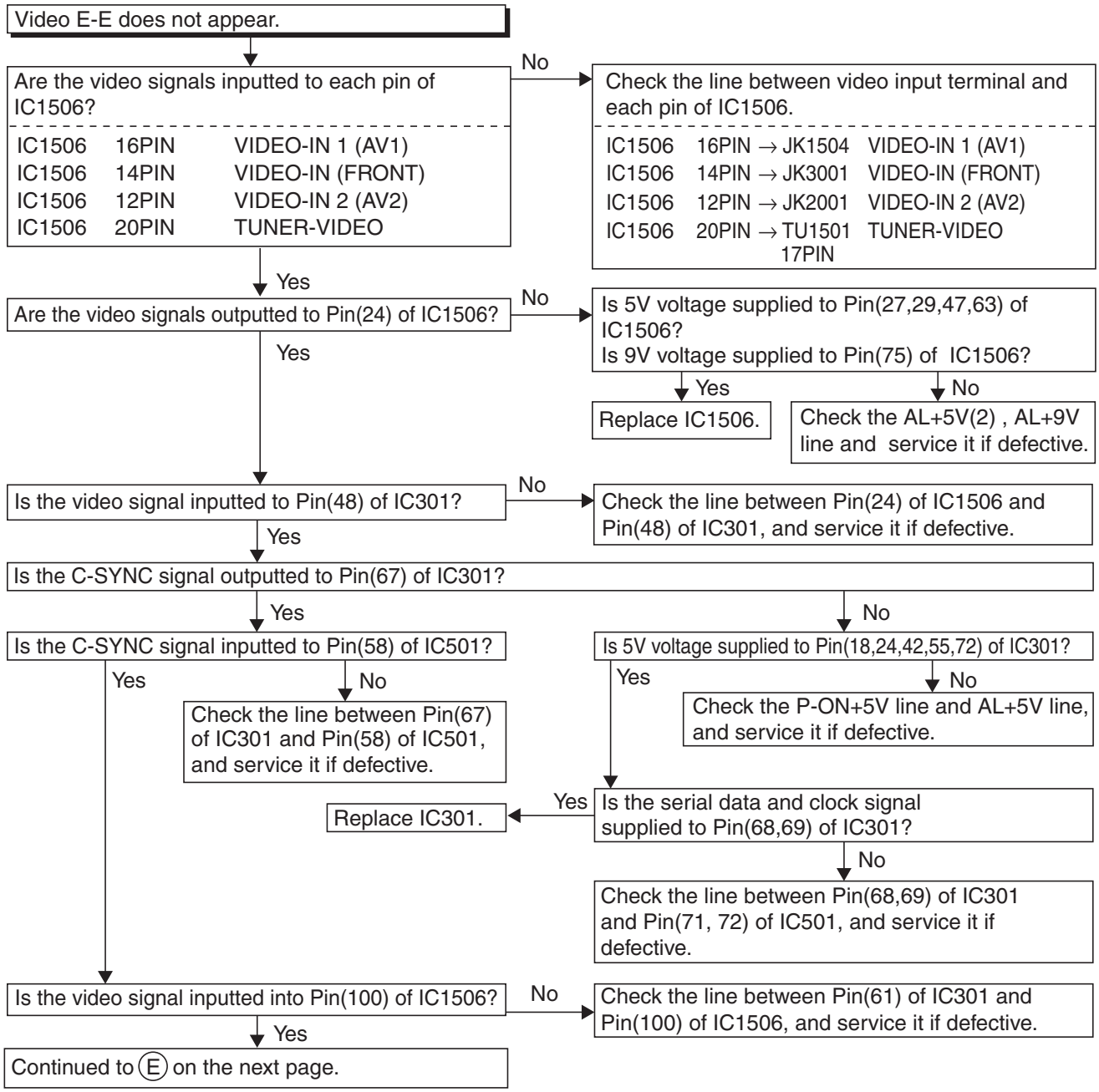
↓ Yes

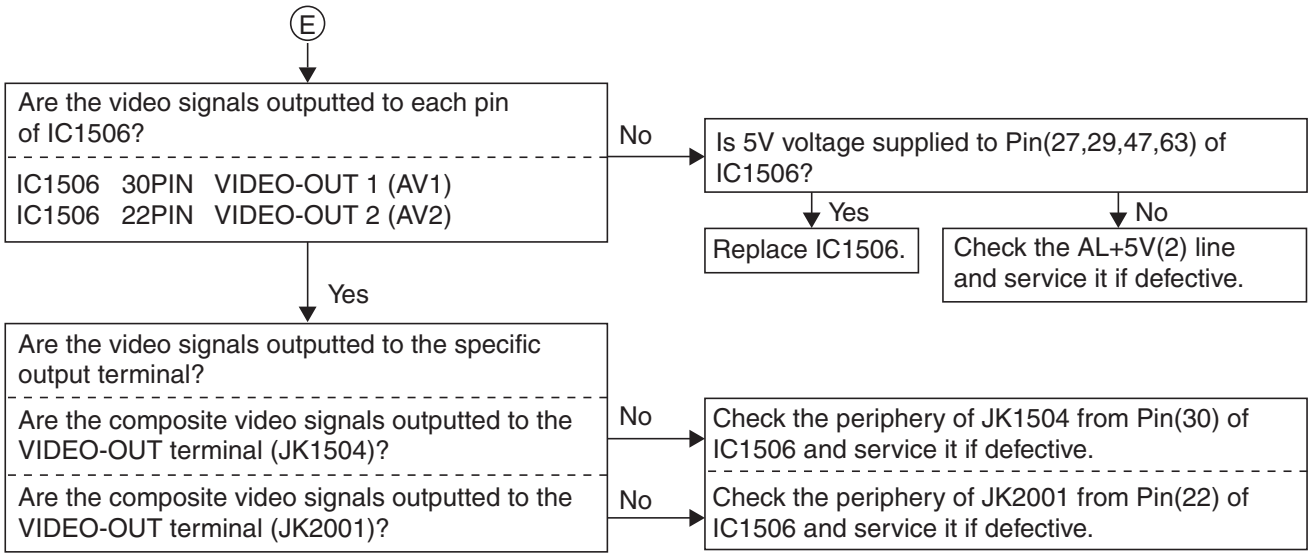
Is the drum PG/FG signal inputted to Pin(90) of IC501? — No → Replace the Capstan Motor Unit or the Cylinder Assembly.

↓ Yes

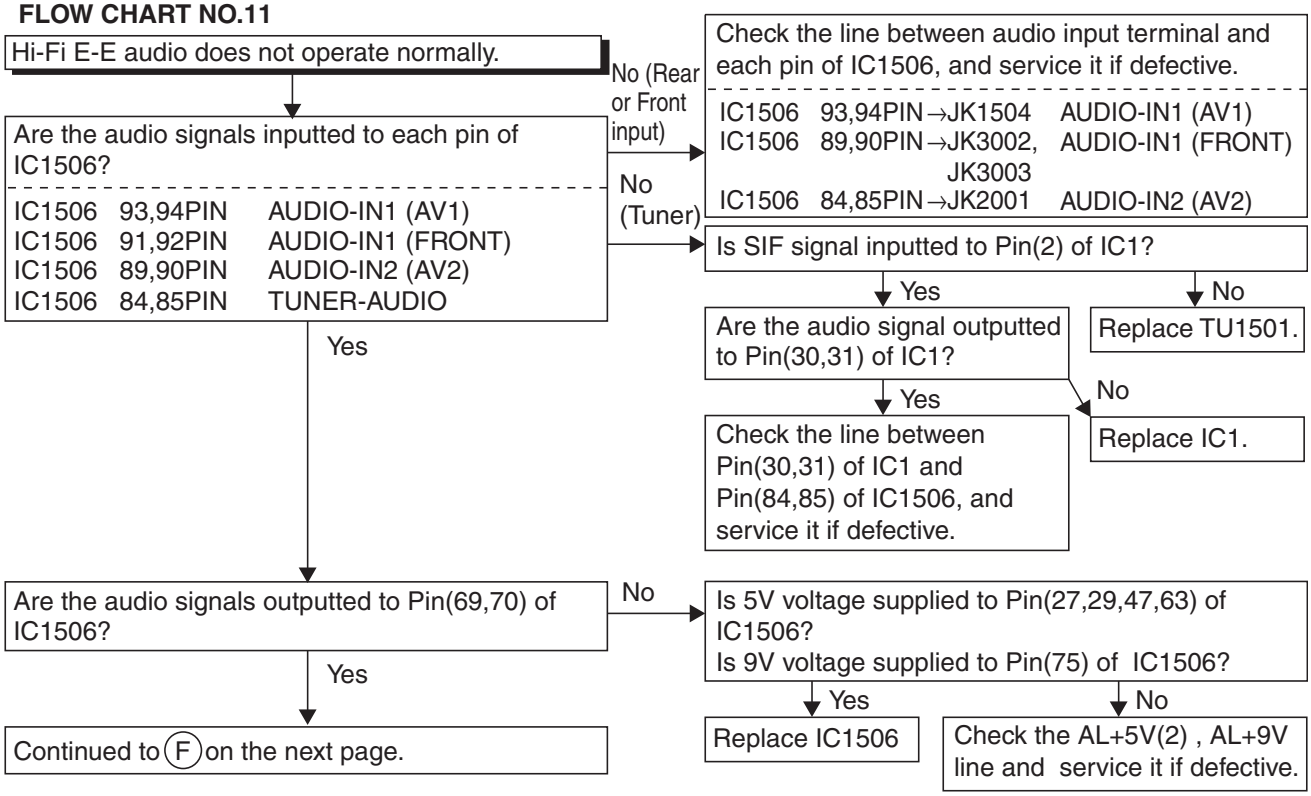
Replace IC501.

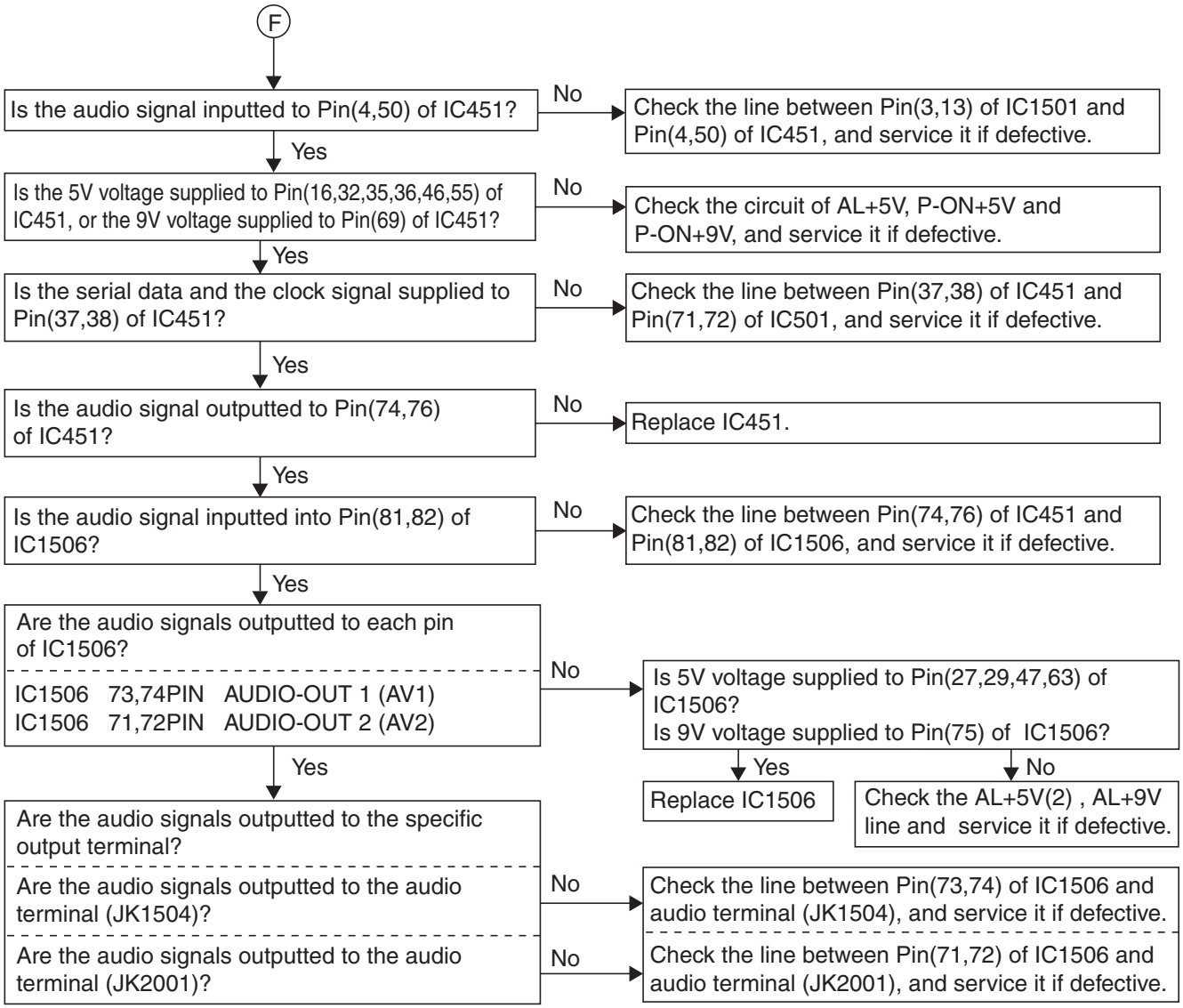
FLOW CHART NO.10


Video E-E does not appear.
Are the video signals inputted to each pin of IC1506?
IC1506 16PIN VIDEO-IN 1 (AV1)
IC1506 14PIN VIDEO-IN (FRONT)
IC1506 12PIN VIDEO-IN 2 (AV2)
IC1506 20PIN TUNER-VIDEO
No
Check the line between video input terminal and each pin of IC1506.
IC1506 16PIN → JK1504 VIDEO-IN 1 (AV1)
IC1506 14PIN → JK3001 VIDEO-IN (FRONT)
IC1506 12PIN → JK2001 VIDEO-IN 2 (AV2)
IC1506 20PIN → TU1501 17PIN TUNER-VIDEO
Yes
Are the video signals outputted to Pin(24) of IC1506?
No
Is 5V voltage supplied to Pin(27,29,47,63) of IC1506?
Is 9V voltage supplied to Pin(75) of IC1506?
Yes
No
Replace IC1506.
Check the AL+5V(2) , AL+9V line and service it if defective.
Yes
Is the video signal inputted to Pin(48) of IC301?
No
Check the line between Pin(24) of IC1506 and Pin(48) of IC301, and service it if defective.
Yes
Is the C-SYNC signal outputted to Pin(67) of IC301?
Yes
No
Is the C-SYNC signal inputted to Pin(58) of IC501?
Is 5V voltage supplied to Pin(18,24,42,55,72) of IC301?
Yes
No
Yes
No
Check the line between Pin(67) of IC301 and Pin(58) of IC501, and service it if defective.
Check the P-ON+5V line and AL+5V line, and service it if defective.
Yes
Is the serial data and clock signal supplied to Pin(68,69) of IC301?
Replace IC301.
No
Check the line between Pin(68,69) of IC301 and Pin(71, 72) of IC501, and service it if defective.
Is the video signal inputted into Pin(100) of IC1506?
No
Check the line between Pin(61) of IC301 and Pin(100) of IC1506, and service it if defective.
Yes
Continued to Ⓔ on the next page.

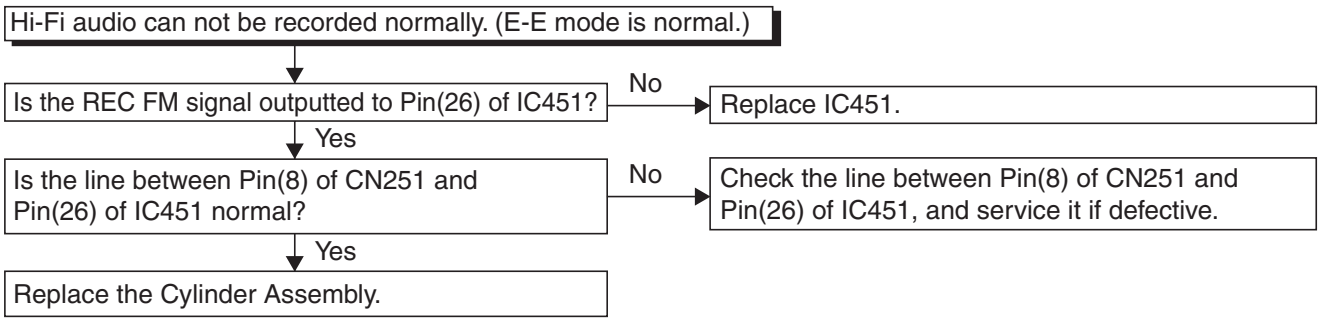

Ⓔ
Are the video signals outputted to each pin of IC1506?
IC1506 30PIN VIDEO-OUT 1 (AV1)
IC1506 22PIN VIDEO-OUT 2 (AV2)
No
Is 5V voltage supplied to Pin(27,29,47,63) of IC1506?
Yes
No
Replace IC1506.
Check the AL+5V(2) line and service it if defective.
Yes
Are the video signals outputted to the specific output terminal?
Are the composite video signals outputted to the VIDEO-OUT terminal (JK1504)?
No
Check the periphery of JK1504 from Pin(30) of IC1506 and service it if defective.
Are the composite video signals outputted to the VIDEO-OUT terminal (JK2001)?
No
Check the periphery of JK2001 from Pin(22) of IC1506 and service it if defective.

FLOW CHART NO.11

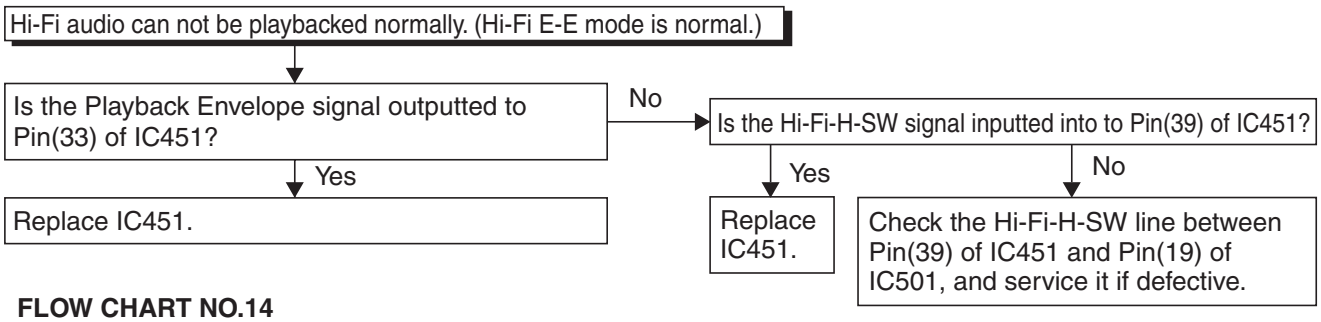

Hi-Fi E-E audio does not operate normally.
No (Rear or Front input)
Check the line between audio input terminal and each pin of IC1506, and service it if defective.
IC1506 93,94PIN →JK1504 AUDIO-IN1 (AV1)
IC1506 89,90PIN →JK3002, JK3003 AUDIO-IN1 (FRONT)
IC1506 84,85PIN →JK2001 AUDIO-IN2 (AV2)
Are the audio signals inputted to each pin of IC1506?
IC1506 93,94PIN AUDIO-IN1 (AV1)
IC1506 91,92PIN AUDIO-IN1 (FRONT)
IC1506 89,90PIN AUDIO-IN2 (AV2)
IC1506 84,85PIN TUNER-AUDIO
No (Tuner)
Is SIF signal inputted to Pin(2) of IC1?
Yes
No
Replace TU1501.
Are the audio signal outputted to Pin(30,31) of IC1?
Yes
No
Replace IC1.
Check the line between Pin(30,31) of IC1 and Pin(84,85) of IC1506, and service it if defective.
Yes
Are the audio signals outputted to Pin(69,70) of IC1506?
No
Is 5V voltage supplied to Pin(27,29,47,63) of IC1506?
Is 9V voltage supplied to Pin(75) of IC1506?
Yes
No
Replace IC1506
Check the AL+5V(2) , AL+9V line and service it if defective.
Yes
Continued to Ⓕ on the next page.


F
Is the audio signal inputted to Pin(4,50) of IC451?
No
Check the line between Pin(3,13) of IC1501 and Pin(4,50) of IC451, and service it if defective.
Yes
Is the 5V voltage supplied to Pin(16,32,35,36,46,55) of IC451, or the 9V voltage supplied to Pin(69) of IC451?
No
Check the circuit of AL+5V, P-ON+5V and P-ON+9V, and service it if defective.
Yes
Is the serial data and the clock signal supplied to Pin(37,38) of IC451?
No
Check the line between Pin(37,38) of IC451 and Pin(71,72) of IC501, and service it if defective.
Yes
Is the audio signal outputted to Pin(74,76) of IC451?
No
Replace IC451.
Yes
Is the audio signal inputted into Pin(81,82) of IC1506?
No
Check the line between Pin(74,76) of IC451 and Pin(81,82) of IC1506, and service it if defective.
Yes
Are the audio signals outputted to each pin of IC1506?
IC1506 73,74PIN AUDIO-OUT 1 (AV1)
IC1506 71,72PIN AUDIO-OUT 2 (AV2)
No
Is 5V voltage supplied to Pin(27,29,47,63) of IC1506?
Is 9V voltage supplied to Pin(75) of IC1506?
Yes
Replace IC1506
No
Check the AL+5V(2) , AL+9V line and service it if defective.
Yes
Are the audio signals outputted to the specific output terminal?
Are the audio signals outputted to the audio terminal (JK1504)?
No
Check the line between Pin(73,74) of IC1506 and audio terminal (JK1504), and service it if defective.
Are the audio signals outputted to the audio terminal (JK2001)?
No
Check the line between Pin(71,72) of IC1506 and audio terminal (JK2001), and service it if defective.

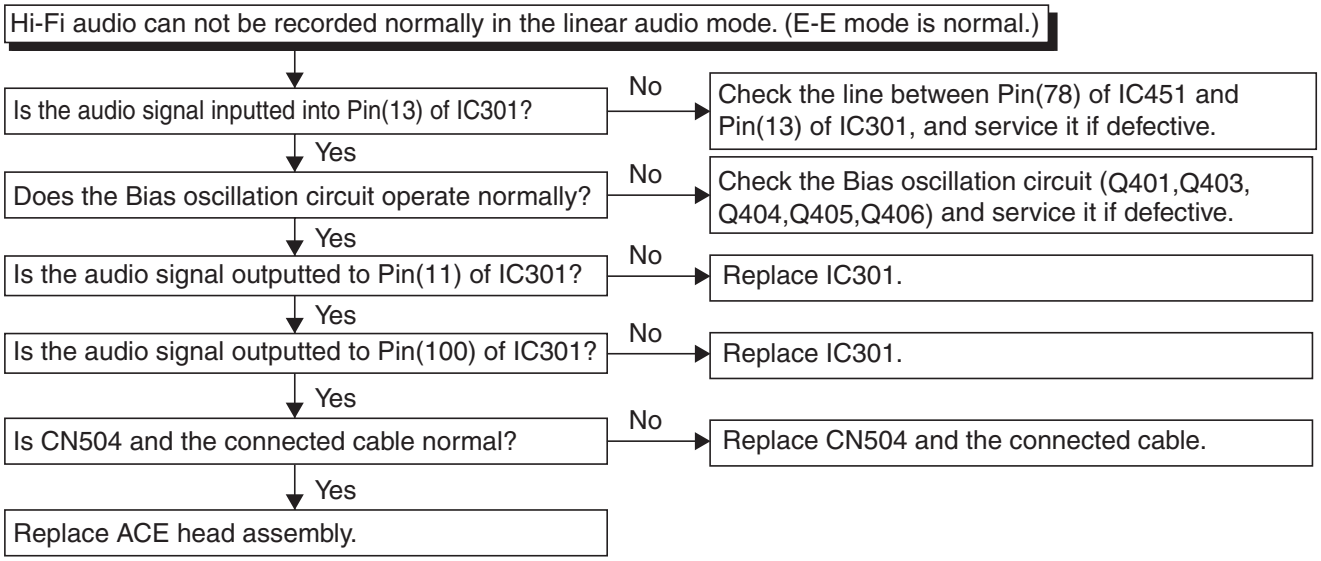
FLOW CHART NO.12


Hi-Fi audio can not be recorded normally. (E-E mode is normal.)
Is the REC FM signal outputted to Pin(26) of IC451?
No
Replace IC451.
Yes
Is the line between Pin(8) of CN251 and Pin(26) of IC451 normal?
No
Check the line between Pin(8) of CN251 and Pin(26) of IC451, and service it if defective.
Yes
Replace the Cylinder Assembly.

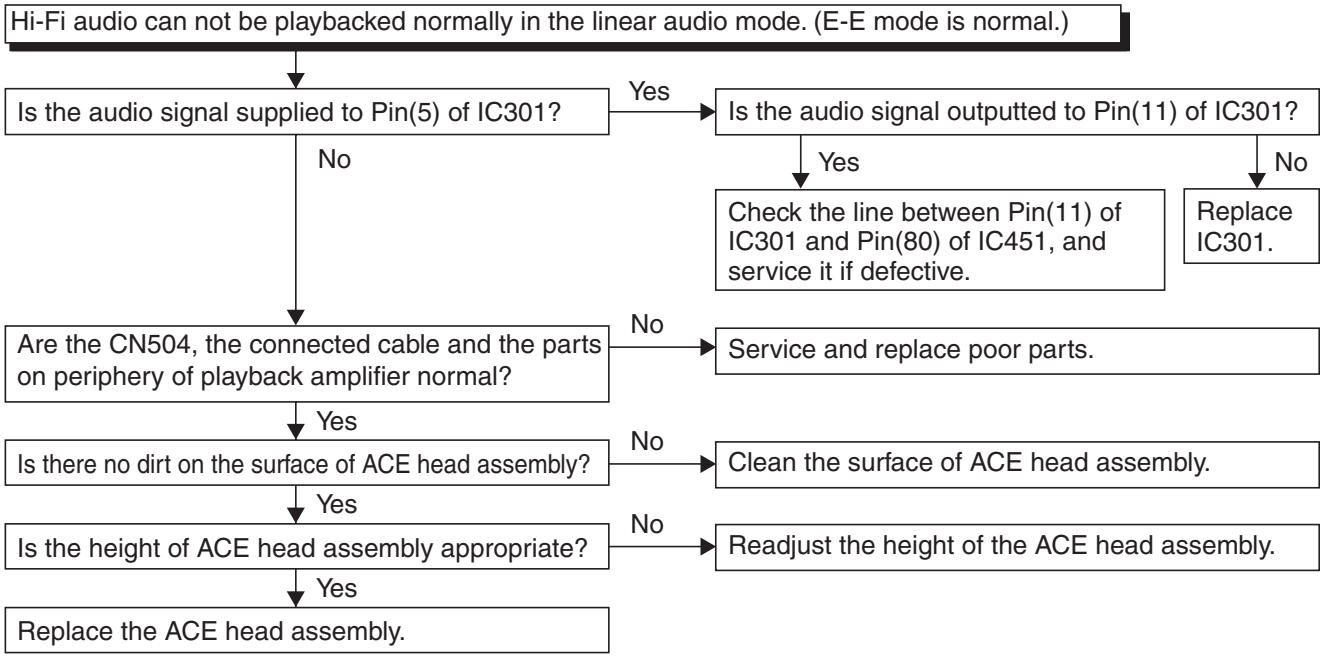
FLOW CHART NO.13


Hi-Fi audio can not be playbacked normally. (Hi-Fi E-E mode is normal.)
Is the Playback Envelope signal outputted to Pin(33) of IC451?
No
Is the Hi-Fi-H-SW signal inputted into to Pin(39) of IC451?
Yes
No
Yes
Replace IC451.
Replace IC451.
Check the Hi-Fi-H-SW line between Pin(39) of IC451 and Pin(19) of IC501, and service it if defective.

FLOW CHART NO.14


Hi-Fi audio can not be recorded normally in the linear audio mode. (E-E mode is normal.)
Is the audio signal inputted into Pin(13) of IC301?
No
Check the line between Pin(78) of IC451 and Pin(13) of IC301, and service it if defective.
Yes
Does the Bias oscillation circuit operate normally?
No
Check the Bias oscillation circuit (Q401,Q403, Q404,Q405,Q406) and service it if defective.
Yes
Is the audio signal outputted to Pin(11) of IC301?
No
Replace IC301.
Yes
Is the audio signal outputted to Pin(100) of IC301?
No
Replace IC301.
Yes
Is CN504 and the connected cable normal?
No
Replace CN504 and the connected cable.
Yes
Replace ACE head assembly.

FLOW CHART NO.15


Hi-Fi audio can not be playbacked normally in the linear audio mode. (E-E mode is normal.)
Is the audio signal supplied to Pin(5) of IC301?
Yes
Is the audio signal outputted to Pin(11) of IC301?
No
Yes
No
Check the line between Pin(11) of IC301 and Pin(80) of IC451, and service it if defective.
Replace IC301.
Are the CN504, the connected cable and the parts on periphery of playback amplifier normal?
No
Service and replace poor parts.
Yes
Is there no dirt on the surface of ACE head assembly?
No
Clean the surface of ACE head assembly.
Yes
Is the height of ACE head assembly appropriate?
No
Readjust the height of the ACE head assembly.
Yes
Replace the ACE head assembly.

FUNCTION INDICATOR SYMBOLS

< VCR Section >

Note:

If a mechanical malfunction occurs, the power is turned off. The following symbols will appear on the display.

Status	Display
When reel or capstan mechanism is not functioning correctly	"W" blinks.
When tape loading mechanism is not functioning correctly	
When cassette loading mechanism is not functioning correctly	
When the drum is not working properly	
P-ON+5V Power safety detection	
Fan does not rotate over 30 seconds.	"W" light and "R" blinks.

When the power comes on again after that by pressing [I/⏻] button, an error message is displayed on the TV screen as follows.

When reel or capstan mechanism is not functioning correctly

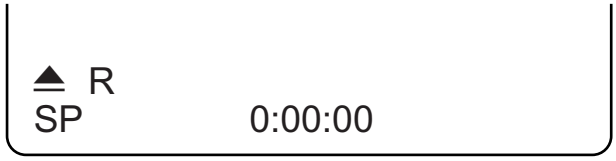


Fig. 1

When tape loading mechanism is not functioning correctly

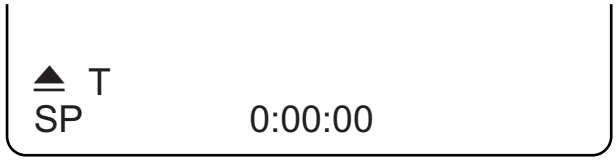


Fig. 2

When cassette loading mechanism is not functioning correctly

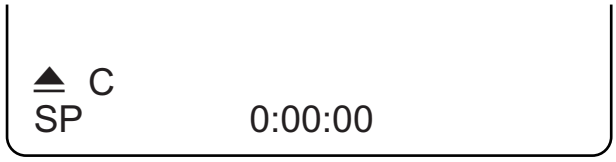


Fig. 3

When the drum is not working properly

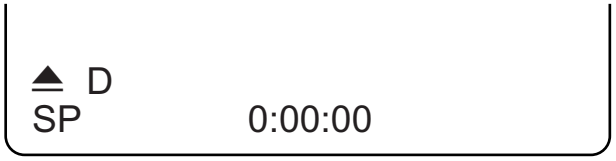


Fig. 4

P-ON+5V Power safety detection

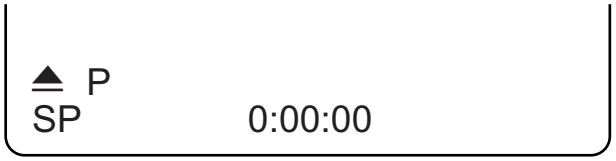
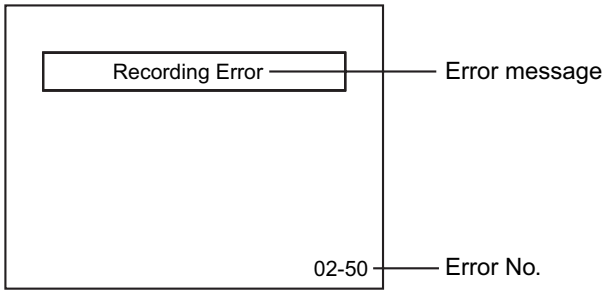


Fig. 5

< DVD/HDD Section >

Note: If an error occurs, a message with the error number appears on the screen.

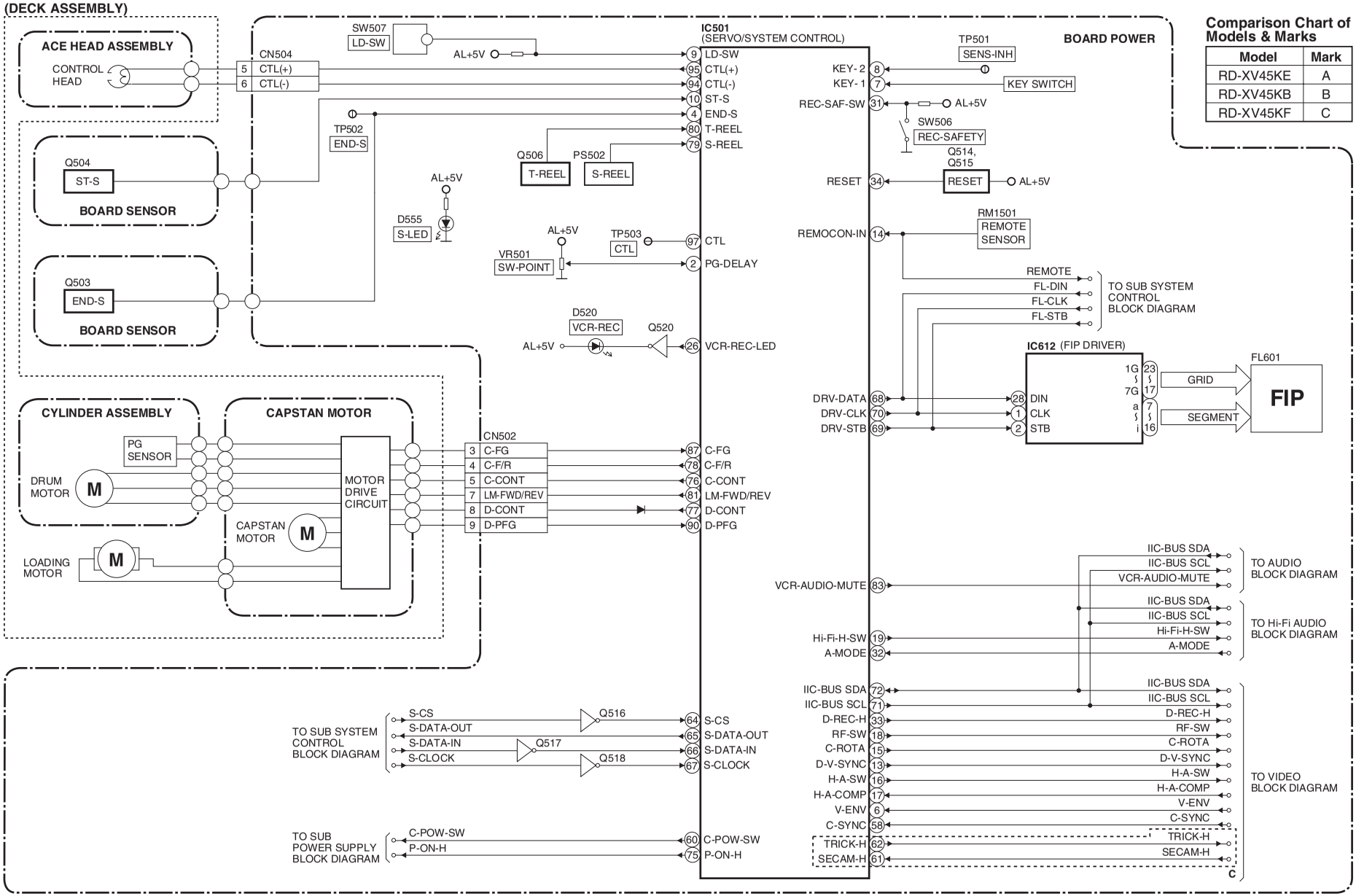


Message	Error No.	Error Description	Error Example
Disc error	04-50	Renewal error at ejecting disc	This code is output when there is a control information writing failure due to tray being open during writing or disc loading.
	04-51	Disc includes still picture	This code is output upon attempt to write data (finalizing disc protect data, etc.) on a disc including a still picture.
Recording error	03-50	Recording error caused by media error	This code is output when recording error caused by media error occurs, e.g.,stopping recording during attempting to record on a scratched disc.
	03-52	Loader error	This code is output when tray open/close error occurs. Also, when the tray open error occurs at F/E and when the recovery fails even if the B/E retries.
	03-53	Poor media	This code is output when a DVD operation error occurs during copying.
	03-54	Control information error and control data error	This code is output when a chip (EMMA) outputs unusual data while recording and the control information writing fails.
	03-55	Writing error (video)	This code is output when video writing fails while copying at high speed.
	03-56	General error	This code is output when a number of errors occur: Ex.1) When Outplay list creation fails. Ex.2) When the system can't take the title information which should be written on the disc. Ex3) When starting to copy, recording is paused and restarted but, after the recording pause, recording start fails.
	03-57	Device error	This code is output when an HDD operation error occurs (HDD recording error), while copying at high speed or constant speed.
	03-60	Unrecordable disc	This code is output when recording is attempted on a non - recordable disc such as a CD or DVD-ROM.
System error	02-50	Erasing error (all titles)	This code is output when an error occurs erasing entire VR playlist, HDD playlist or HDD originals.
	02-51	Disc protection failure	This code is output when protected pre-existing information that should be on a disc is missing (VR disc protection error).
	02-52	Format failure	This code is output when HDD formatting occurs in maintenance mode.
	02-53	Abnormal loader	This code is output when an appropriate DVD drive is not connected.
	02-54	Abnormal HDD mount	This code is output when a [PLAY], [STOP], [REC], [MENU] or [LIST] button is pressed while HDD is not functional.
	02-55	Changing status failure during VCR dubbing	This code is output when, during dubbing from HDD or DVD to VCR, playback cannot be initiated or playback cannot be discontinued.
	02-56	Abnormal VCR mechanism	This code is output when a VCR mechanism abnormality occurs. After the error message is displayed, the power turns off.
	02-57	Fan lock	This code is output when fan locking (over 30 seconds) is detected. After the error message is displayed, the power turns off.
	02-58	F/E hang-up	This code is output when an F/E hang-up event occurs. After the error message is displayed, the power turns off.
	02-59	HDD hang-up	This code is output when HDD hang-up event occurs. After the error message is displayed, the power turns off.

BLOCK DIAGRAMS

Servo/System Control Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

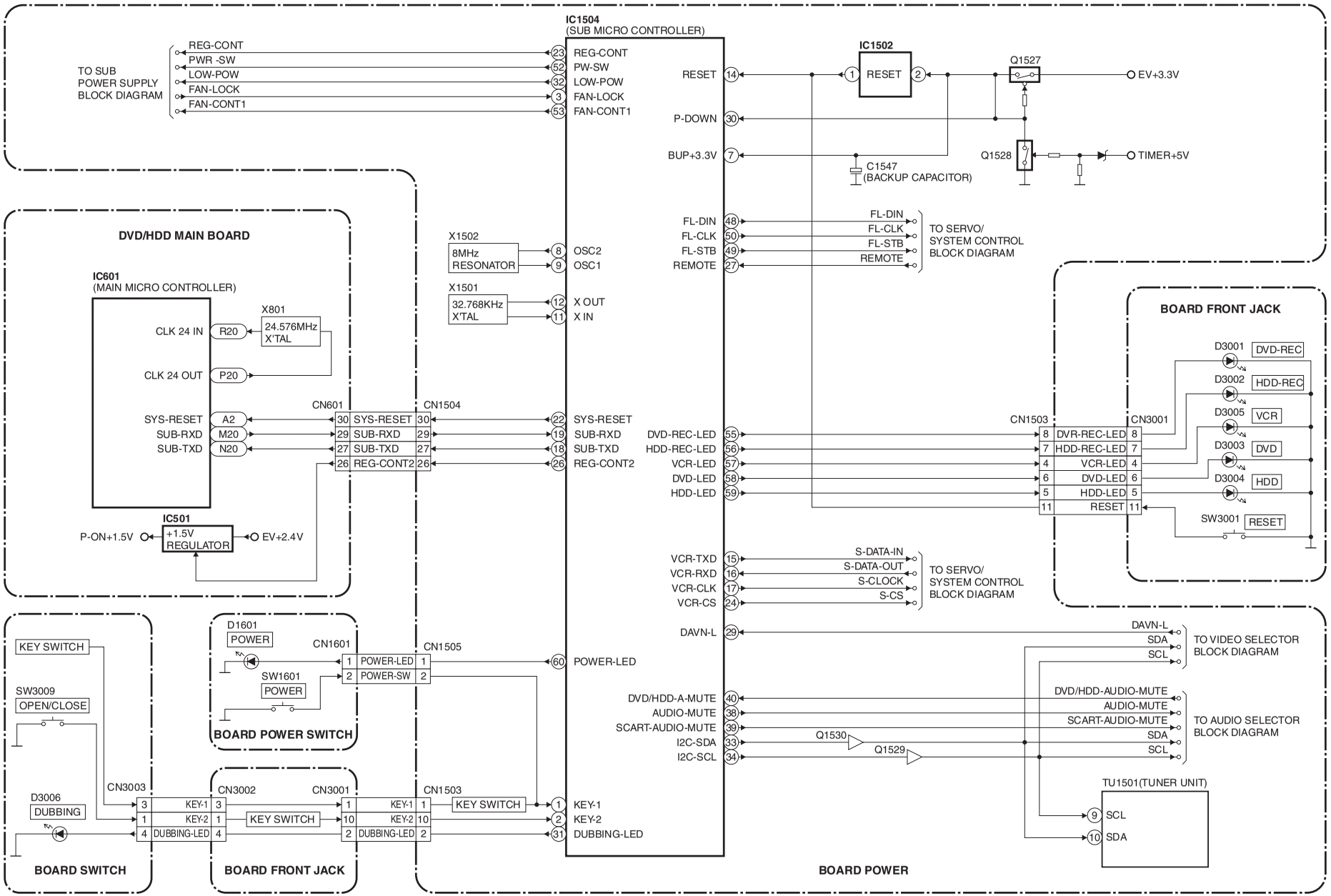


Comparison Chart of Models & Marks

Model	Mark
RD-XV45KE	A
RD-XV45KB	B
RD-XV45KF	C

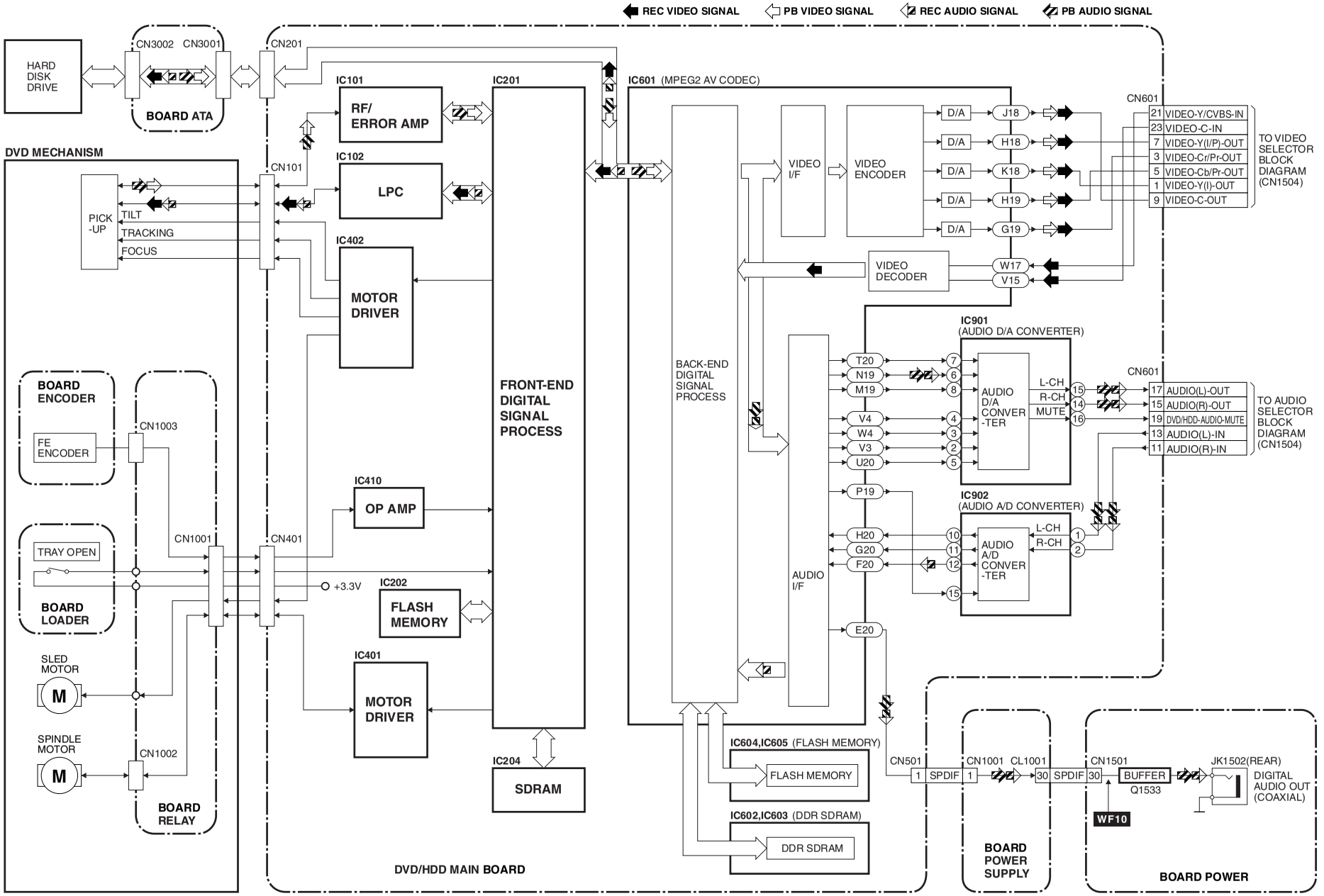
Sub System Control Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



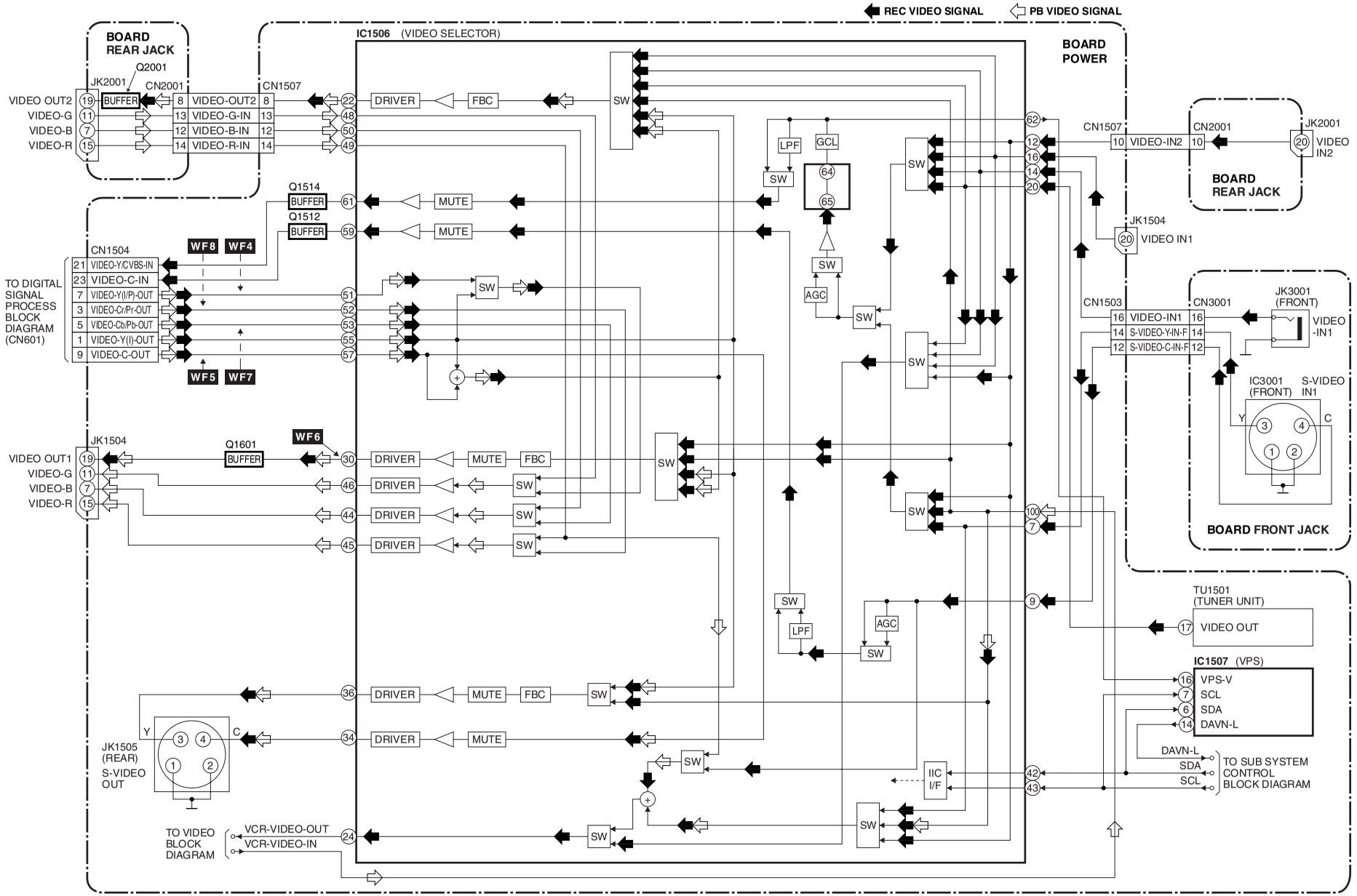
Digital Signal Process Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



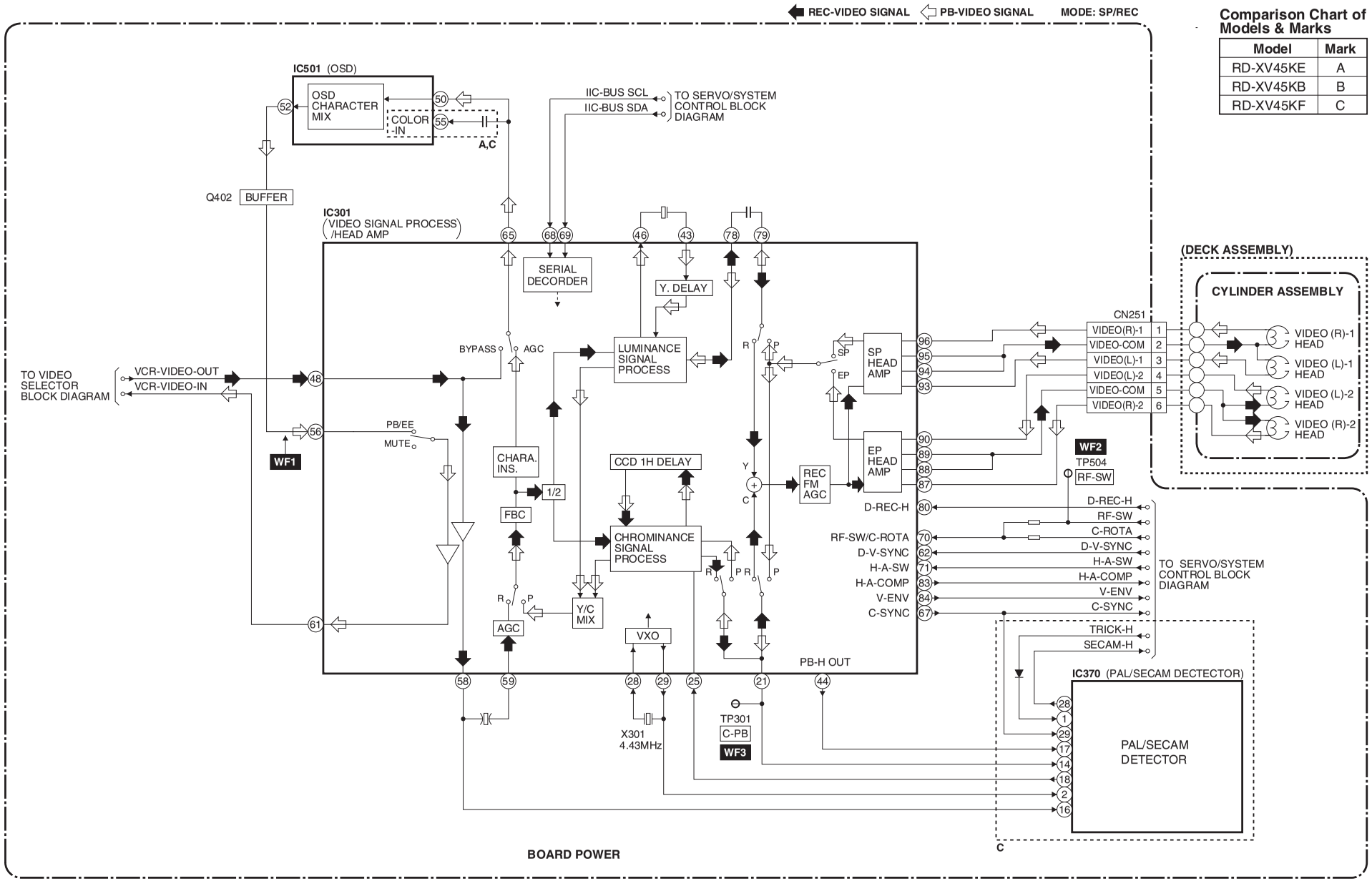
Video Selector Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



Video Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

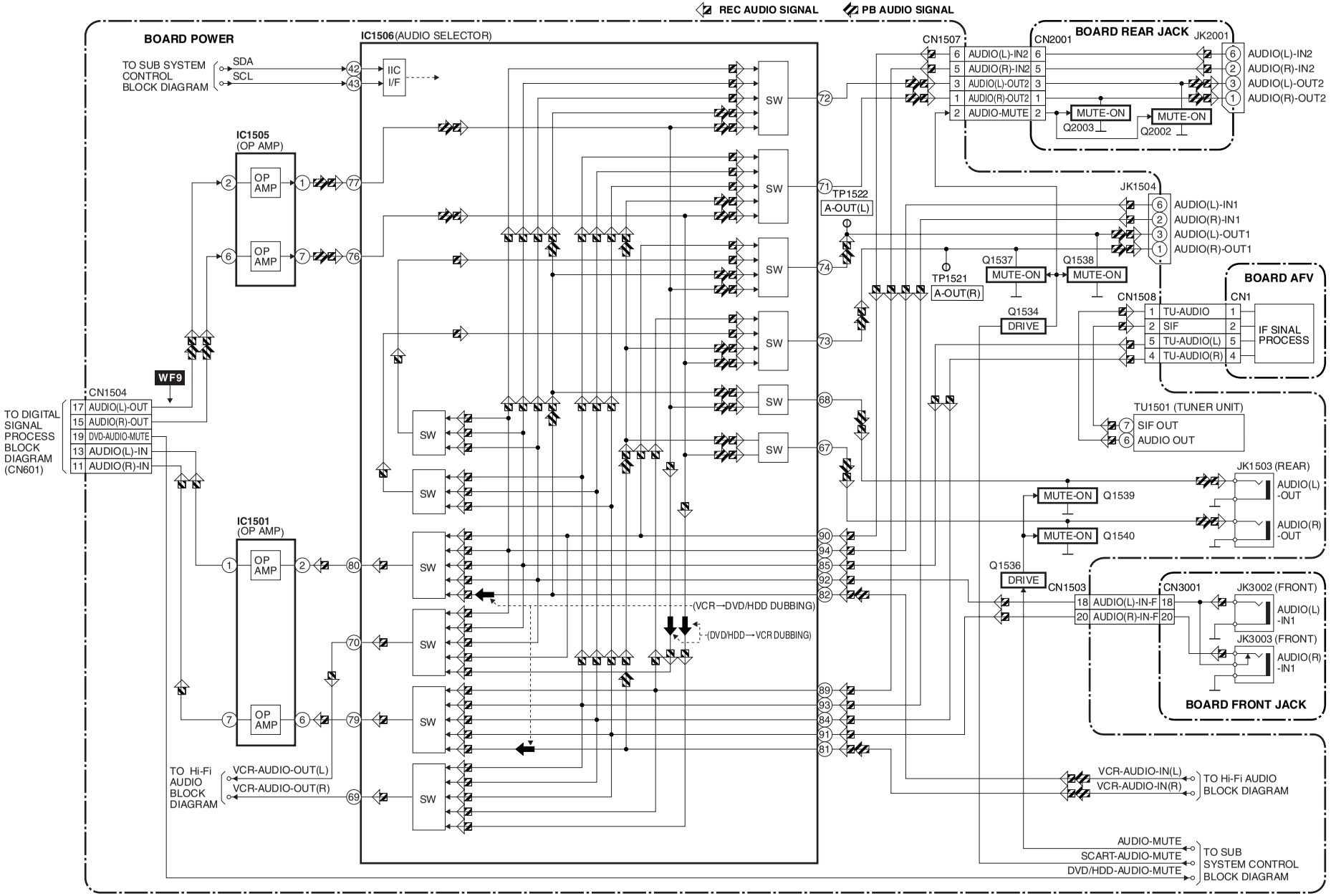


Comparison Chart of Models & Marks

Model	Mark
RD-XV45KE	A
RD-XV45KB	B
RD-XV45KF	C

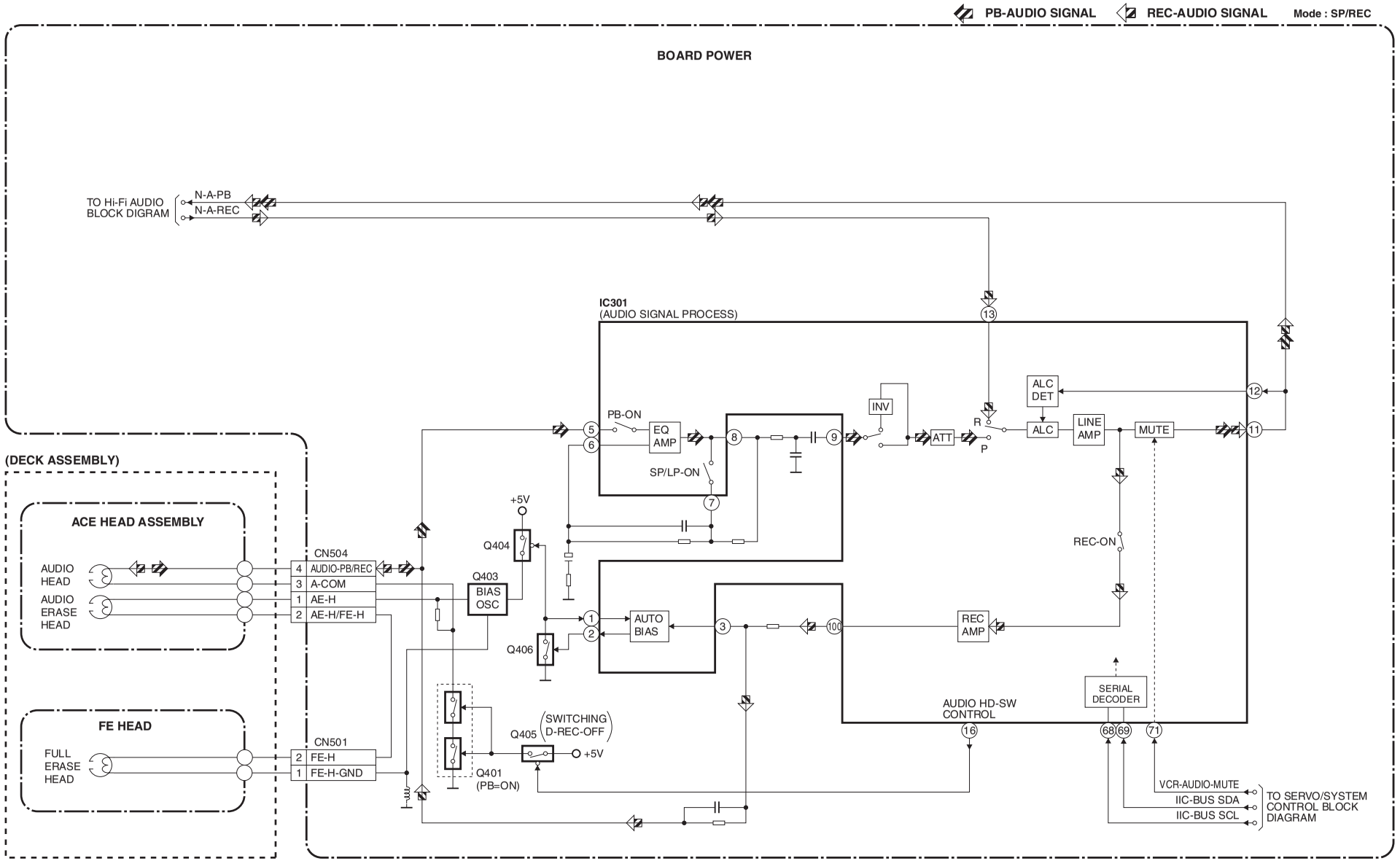
Audio Selector Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



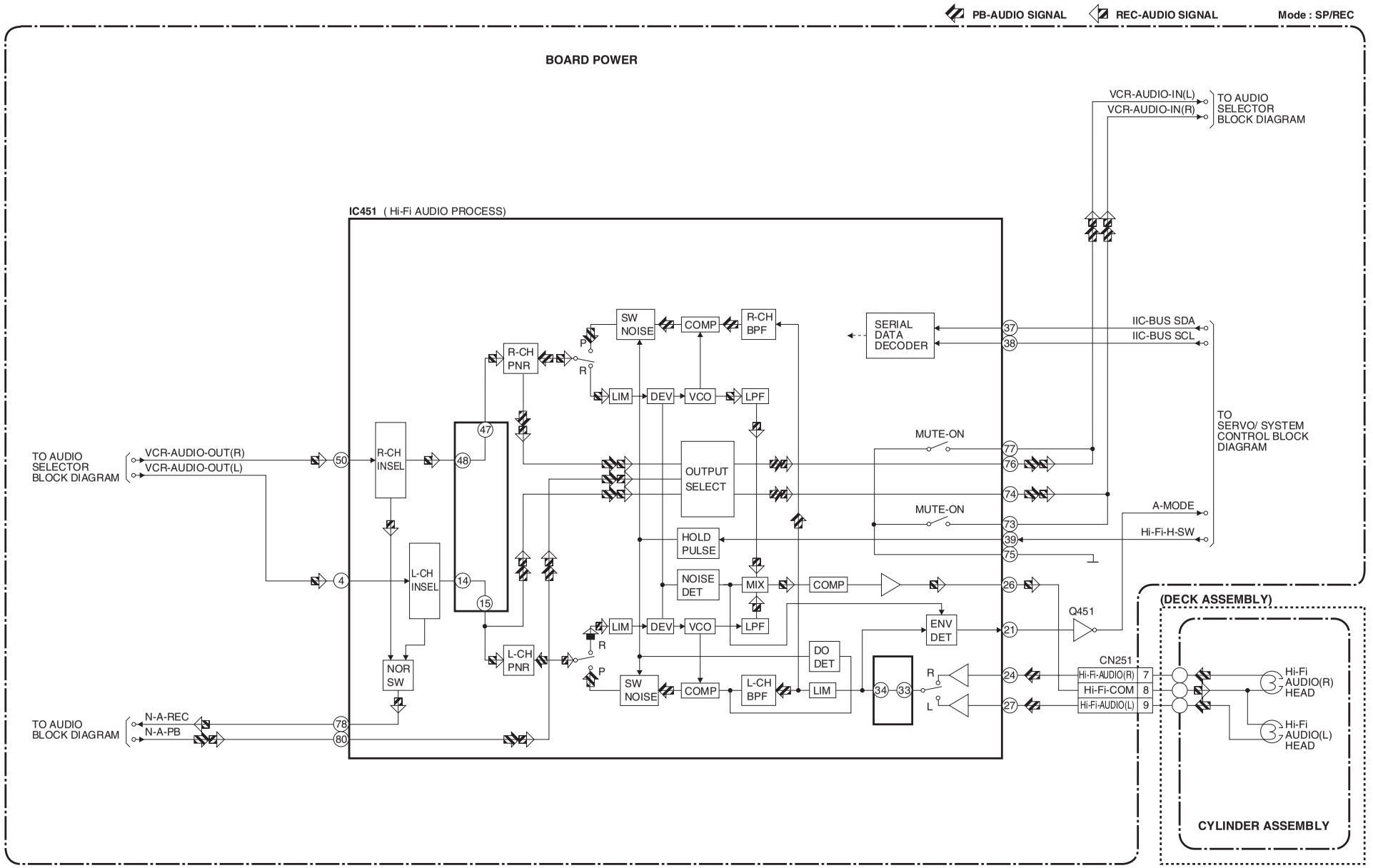
Audio Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



Hi-Fi Audio Selector Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



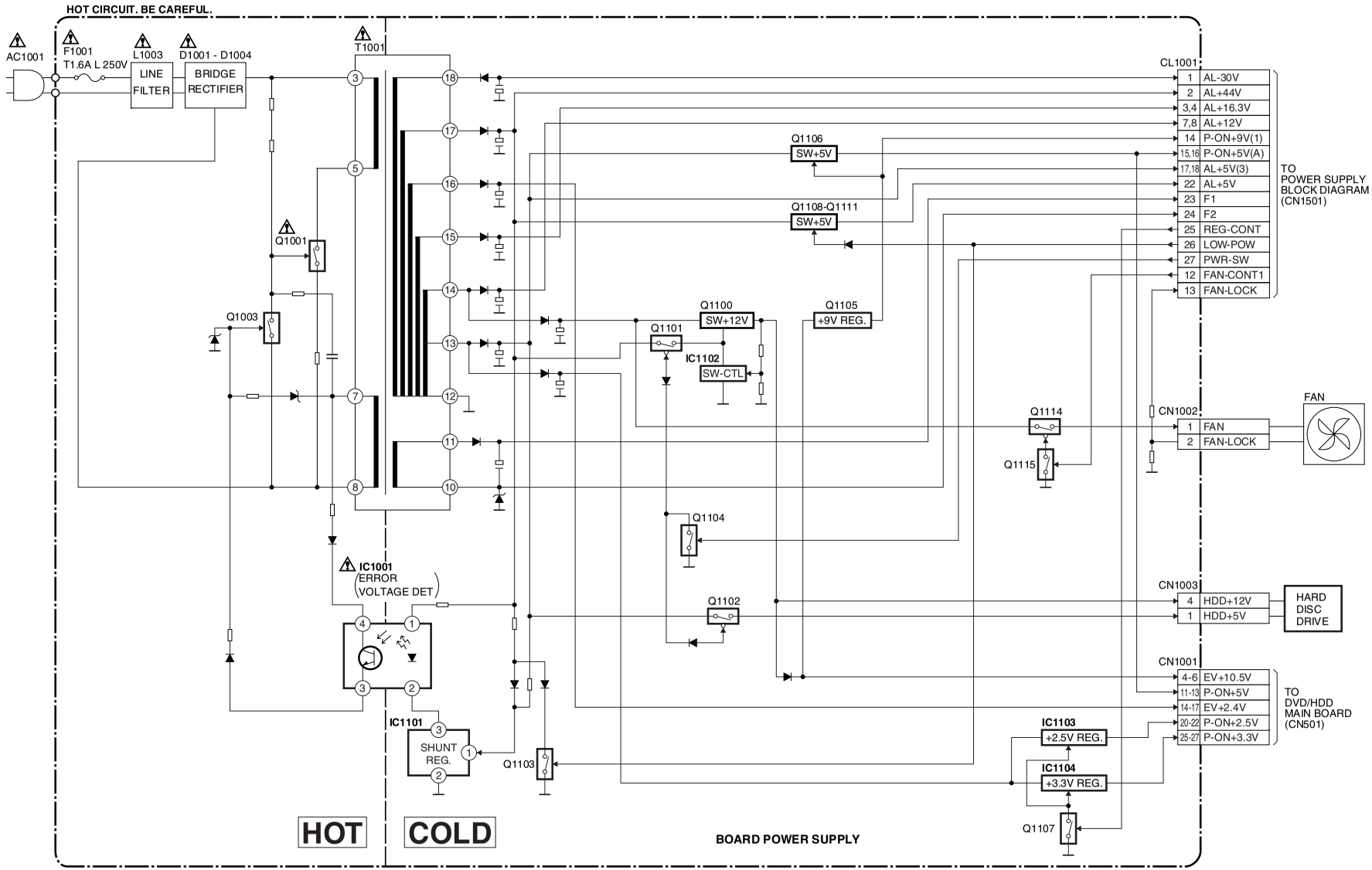
Power Supply Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

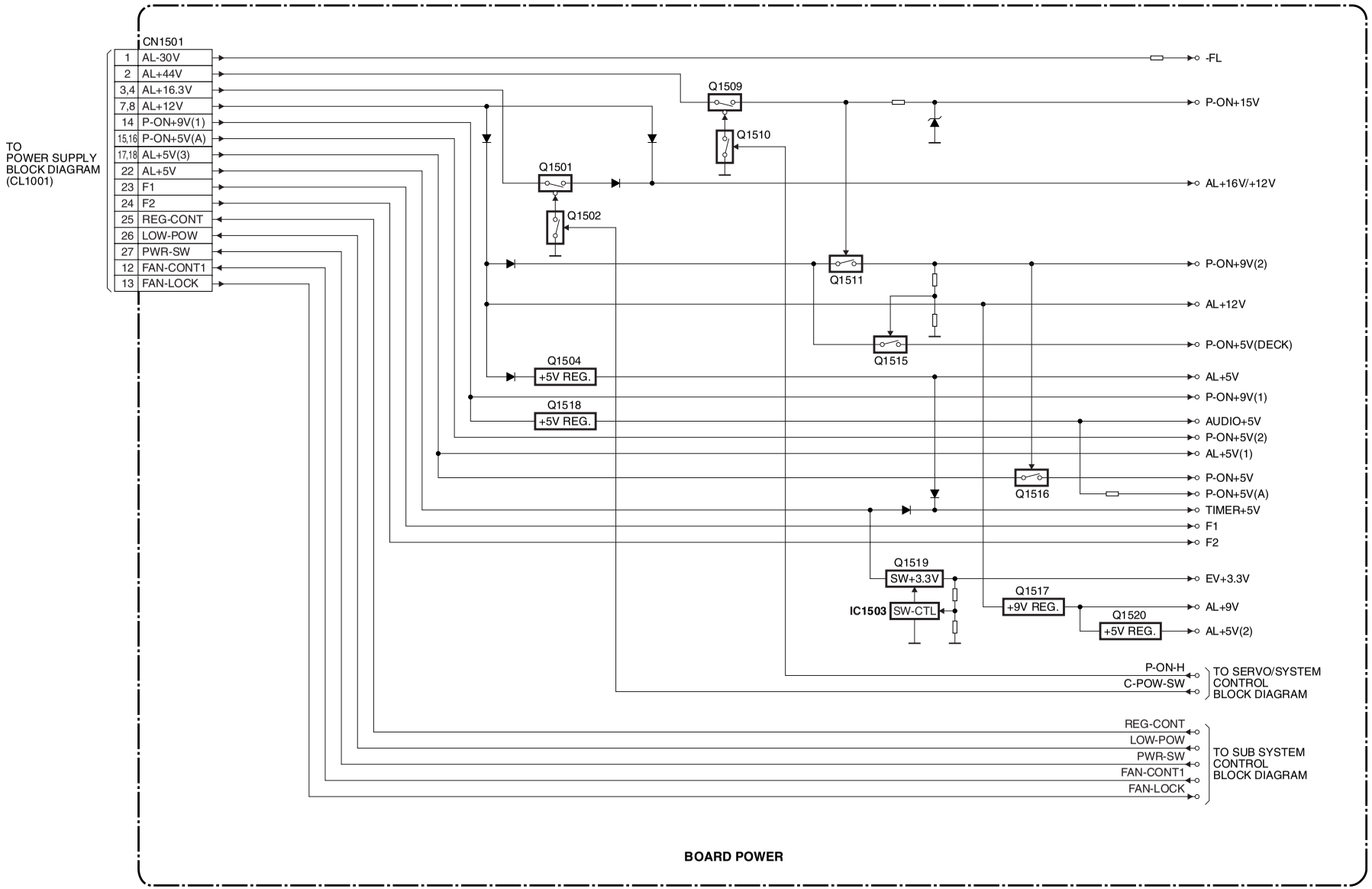
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



Sub Power Supply Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



SCHEMATIC DIAGRAMS / BOARD'S AND TEST POINTS

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

Standard Notes

WARNING

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.
6. Electrical parts such as capacitors, connectors, diodes, IC's, transistors, resistors, switches, and fuses are identified by four digits. The first two digits are not shown for each component. In each block of the diagram, there is a note such as shown below to indicate these abbreviated two digits.

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.

2. CAUTION:

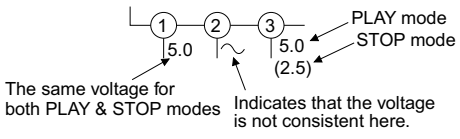
Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

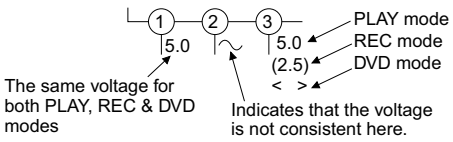
1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Voltage indications for PLAY and REC modes on the schematics are as shown below:

< DVD/DVR Section >



< VCR Section >

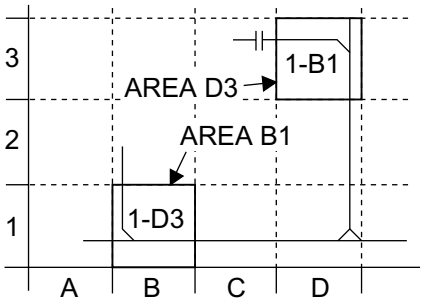


Unit: Volts

5. How to read converged lines

1-D3
- Distinction Area
- Line Number (1 to 3 digits)

Examples:
1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".



6. Test Point Information

: Indicates a test point with a jumper wire across a hole in the BOARD.

: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

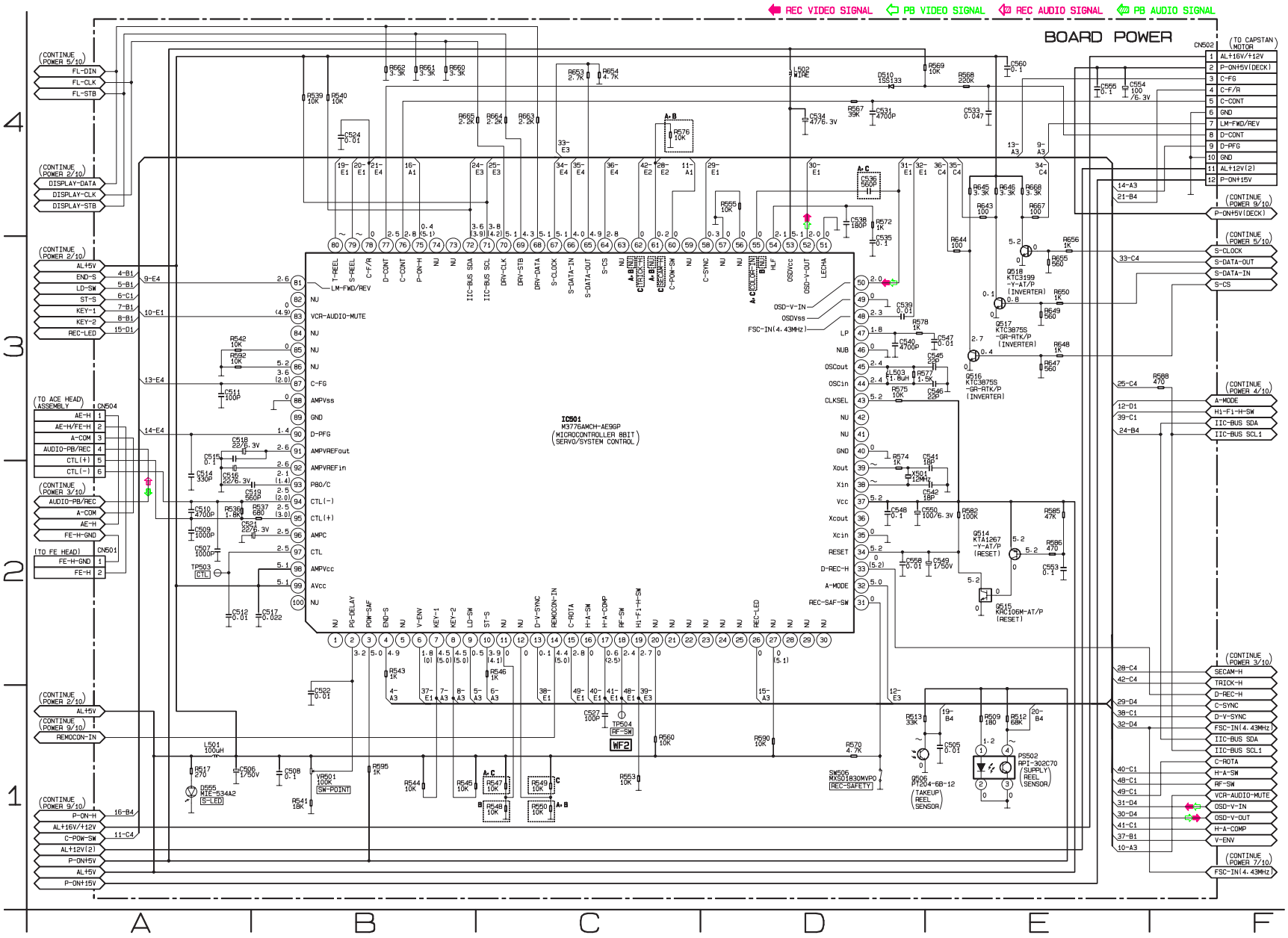
: Used to indicate a test point with a test pin.

POWER 1/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

Comparison Chart of Models and Marks

MODEL	MARK
RD-XV45KE	A
RD-XV45KB	B
RD-XV45KF	C

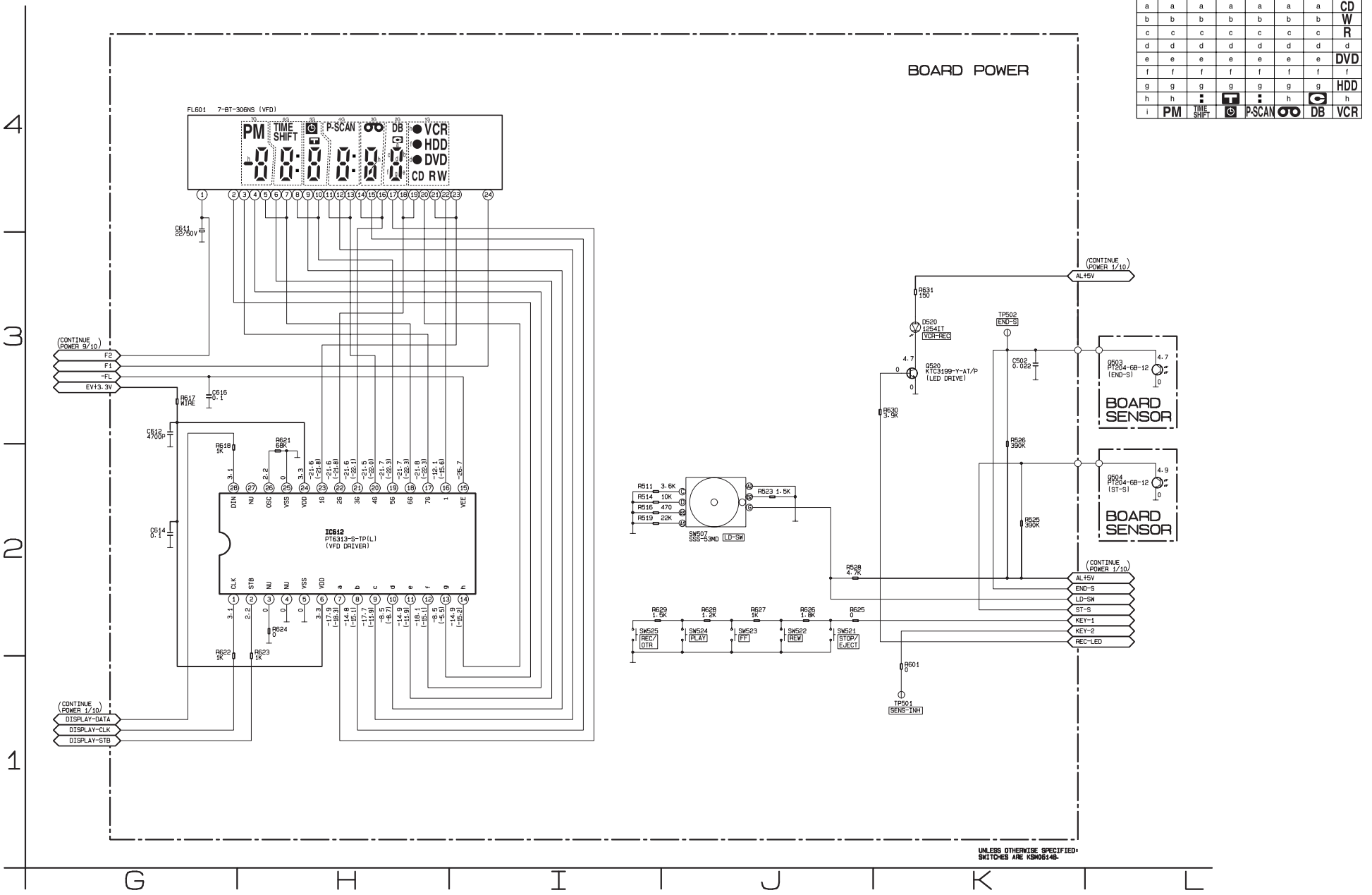


POWER 2/10 & SENSOR Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

FL601 MATRIX CHART

	7G	6G	5G	4G	3G	2G	1G
a	a	a	a	a	a	a	CD
b	b	b	b	b	b	b	W
c	c	c	c	c	c	c	R
d	d	d	d	d	d	d	d
e	e	e	e	e	e	e	DVD
f	f	f	f	f	f	f	f
g	g	g	g	g	g	g	HDD
h	h	:	T	:	h	C	h
i	PM	TIME SHIFT	C	P-SCAN	oo	DB	VCR

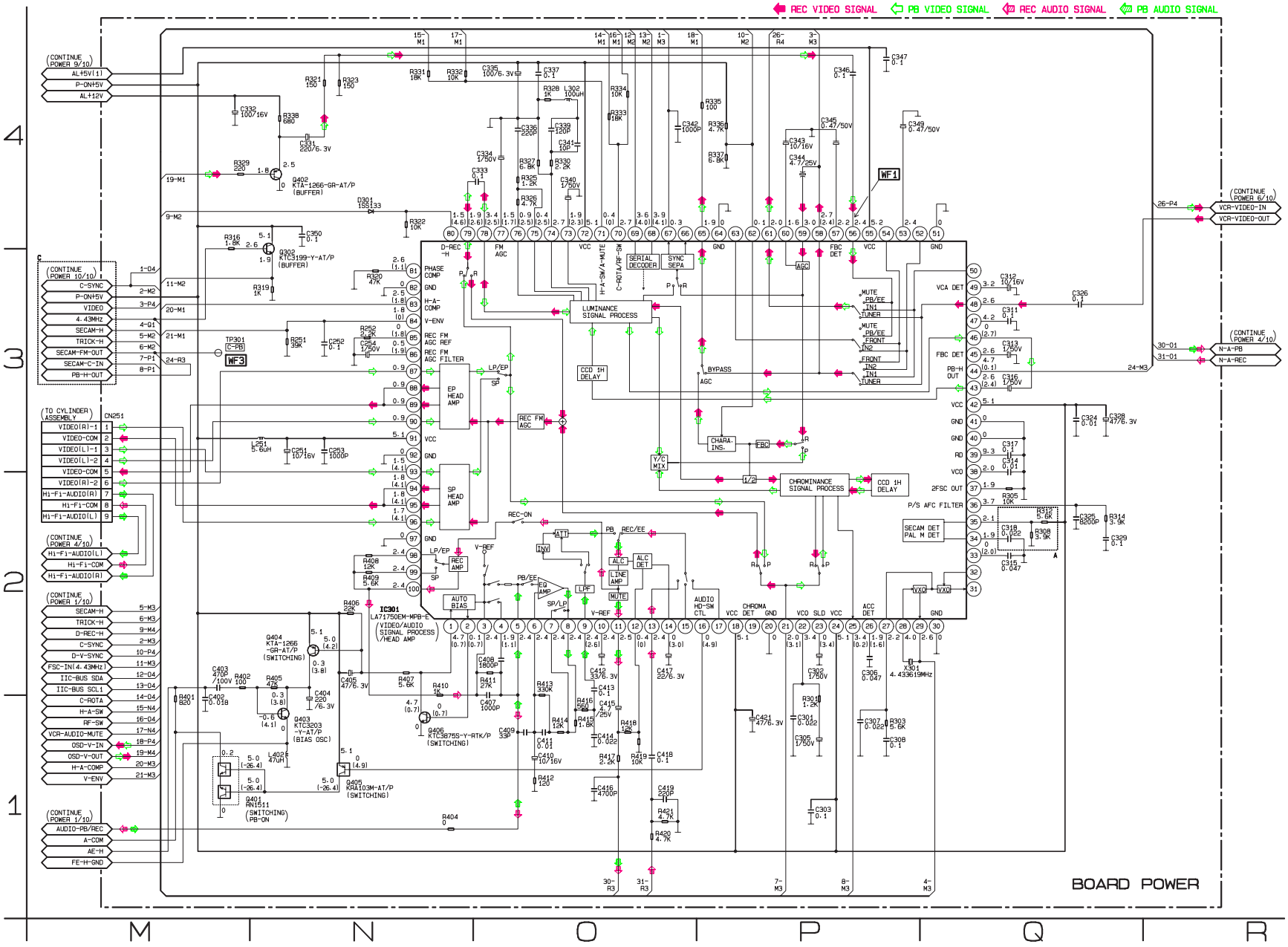


POWER 3/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

Comparison Chart of Models and Marks

MODEL	MARK
RD-XV45KE	A
RD-XV45KB	B
RD-XV45KF	C

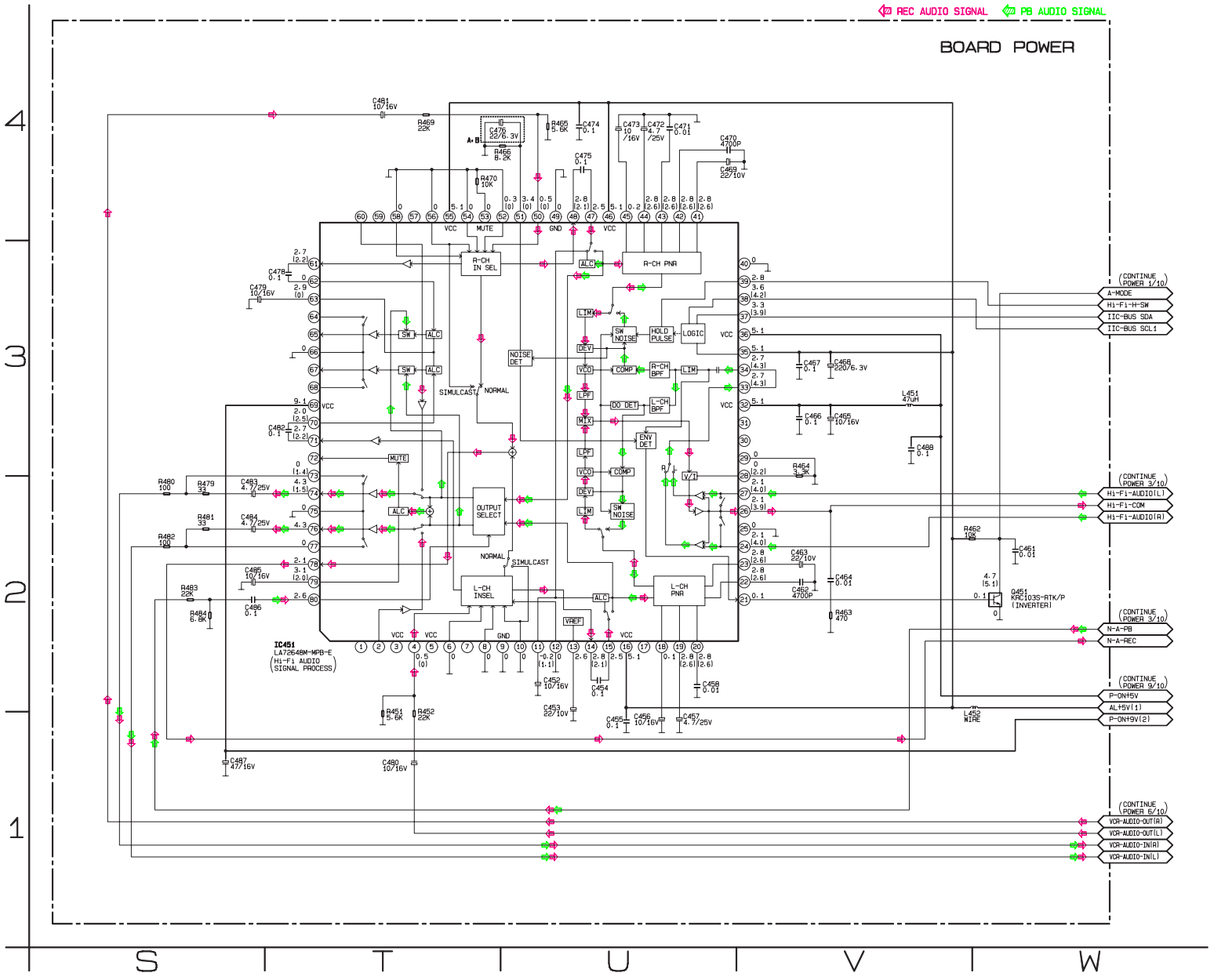


POWER 4/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

Comparison Chart of Models and Marks

MODEL	MARK
RD-XV45KE	A
RD-XV45KB	B
RD-XV45KF	C



POWER 5/10 & POWER SWITCH Schematic Diagram < VCR Section >

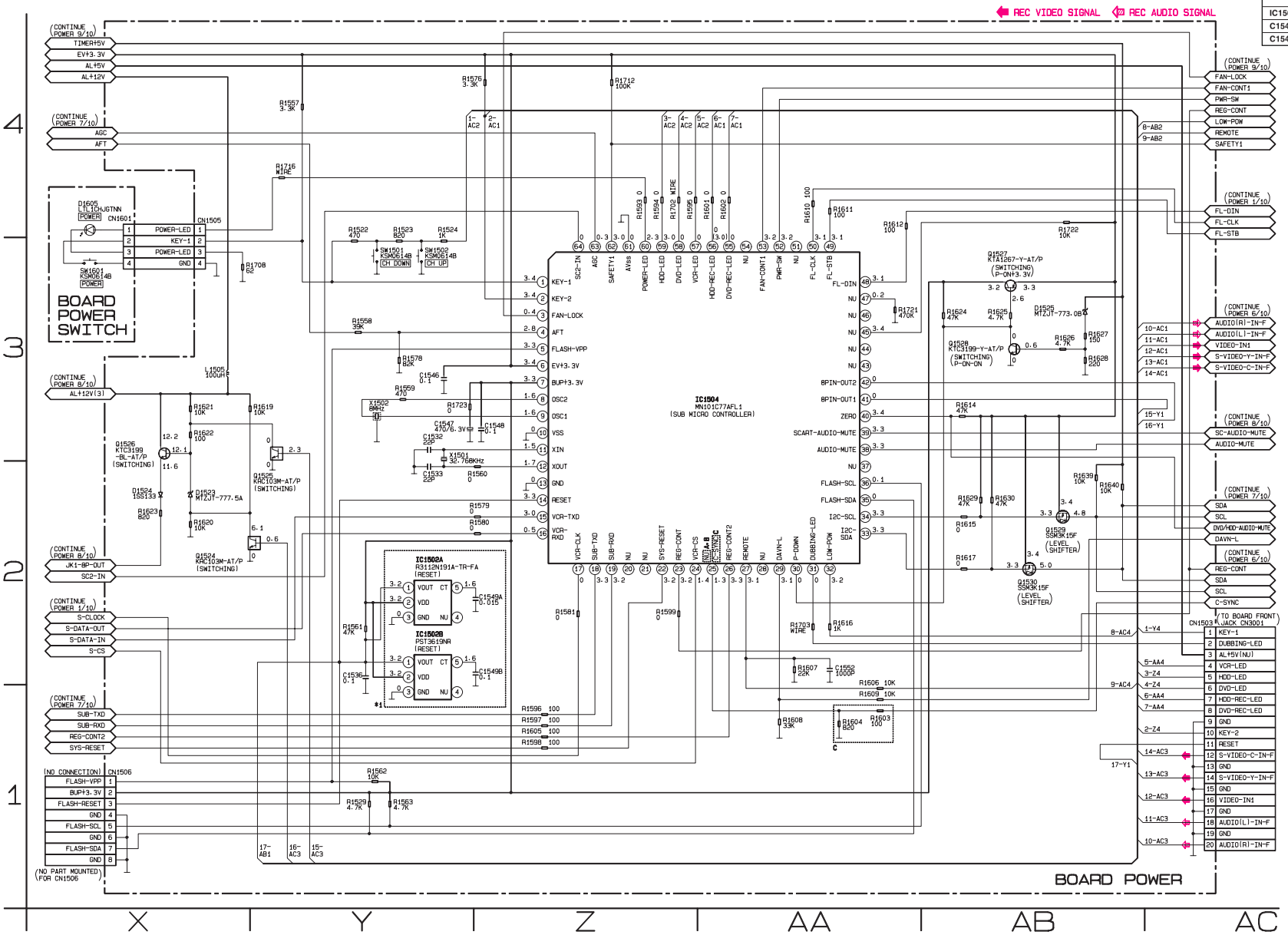
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

*1 NOTE
These components (IC1502A, C1549A, IC1502B, C1549B) can be used in any models.
However, you cannot mix components under Group A with the ones under Group B.
You can choose either Group. The difference between Group A and Group B is shown below.

	Group A	Group B
IC1502A	R3112N191A-TR-FA /BU4219G-TR	--------
IC1502B	--------	PST3619NR
C1549A	0.015	--------
C1549B	--------	0.1

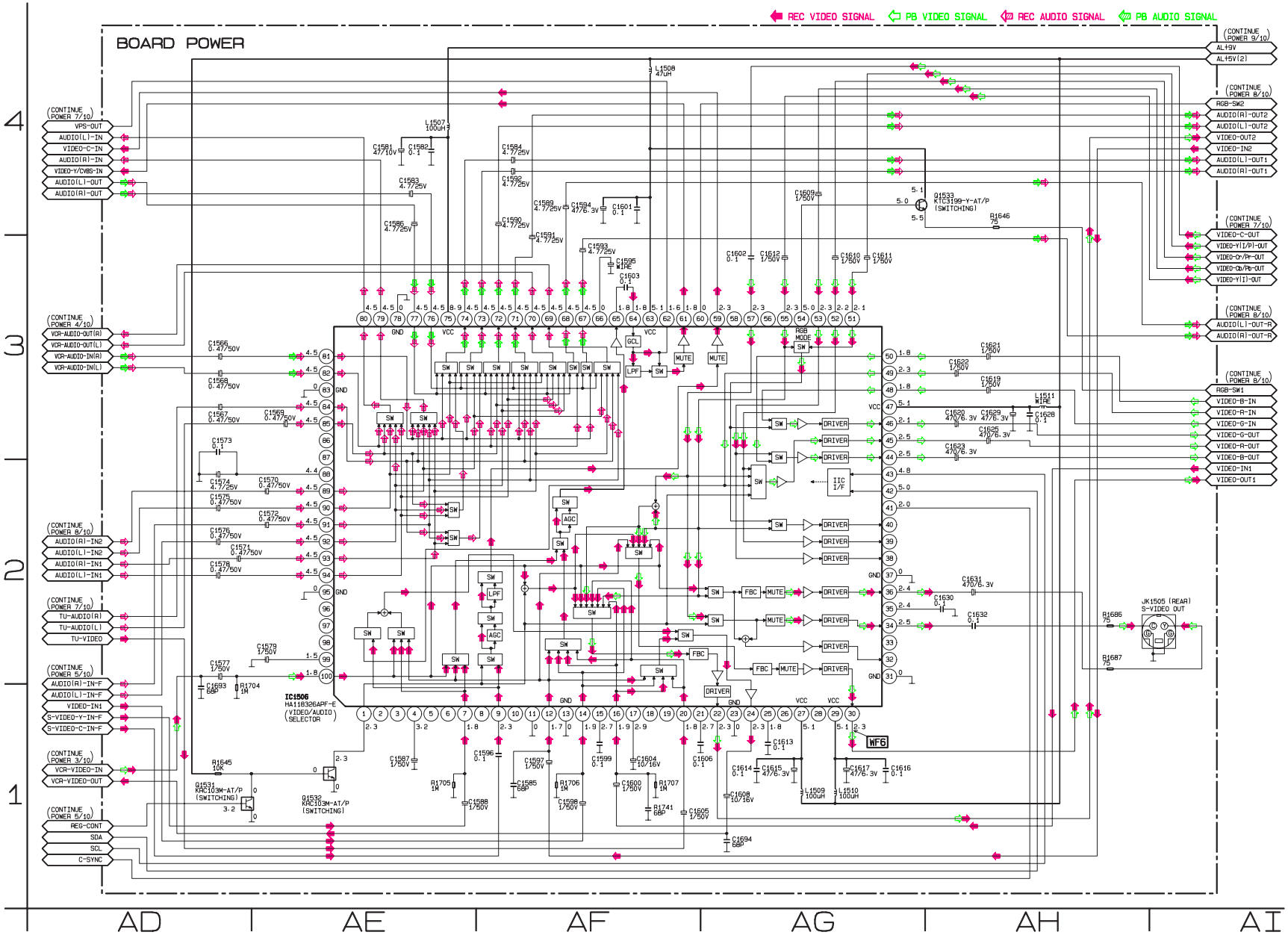
Comparison Chart of Models and Marks

MODEL	MARK
RD-XV45KE	A
RD-XV45KB	B
RD-XV45KF	C



POWER 6/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

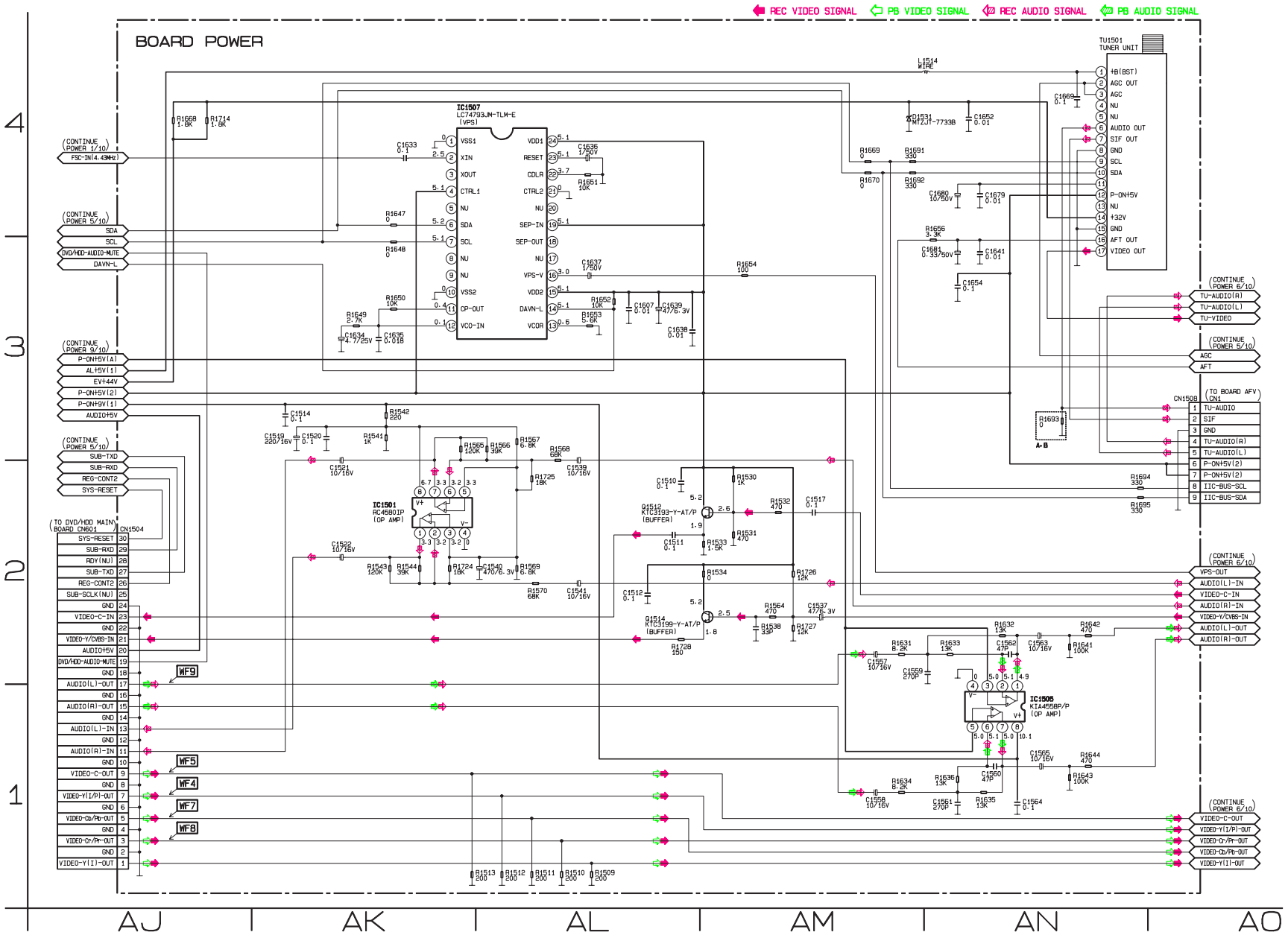


POWER 7/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

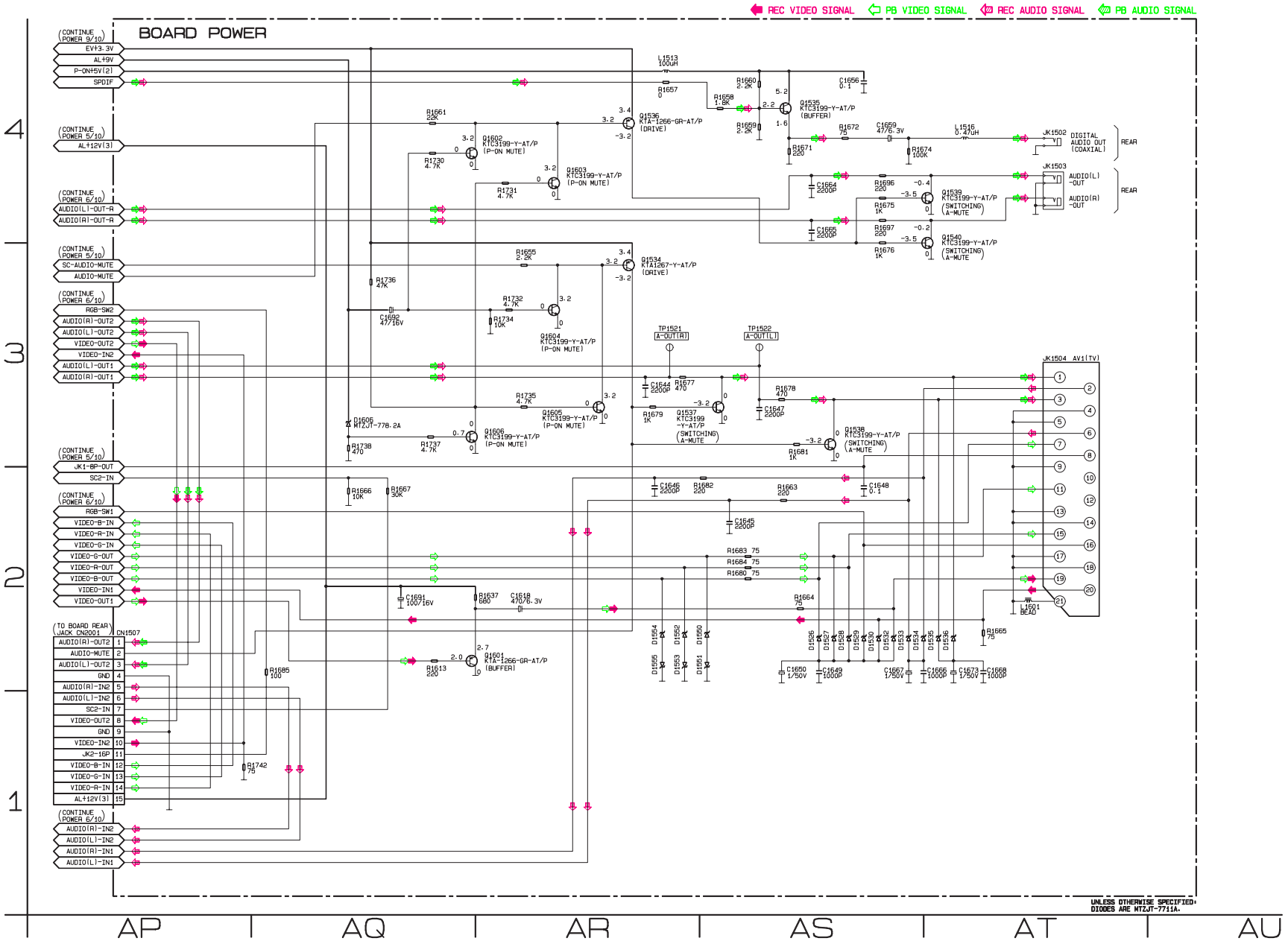
Comparison Chart of Models and Marks

MODEL	MARK
RD-XV45KE	A
RD-XV45KB	B
RD-XV45KF	C



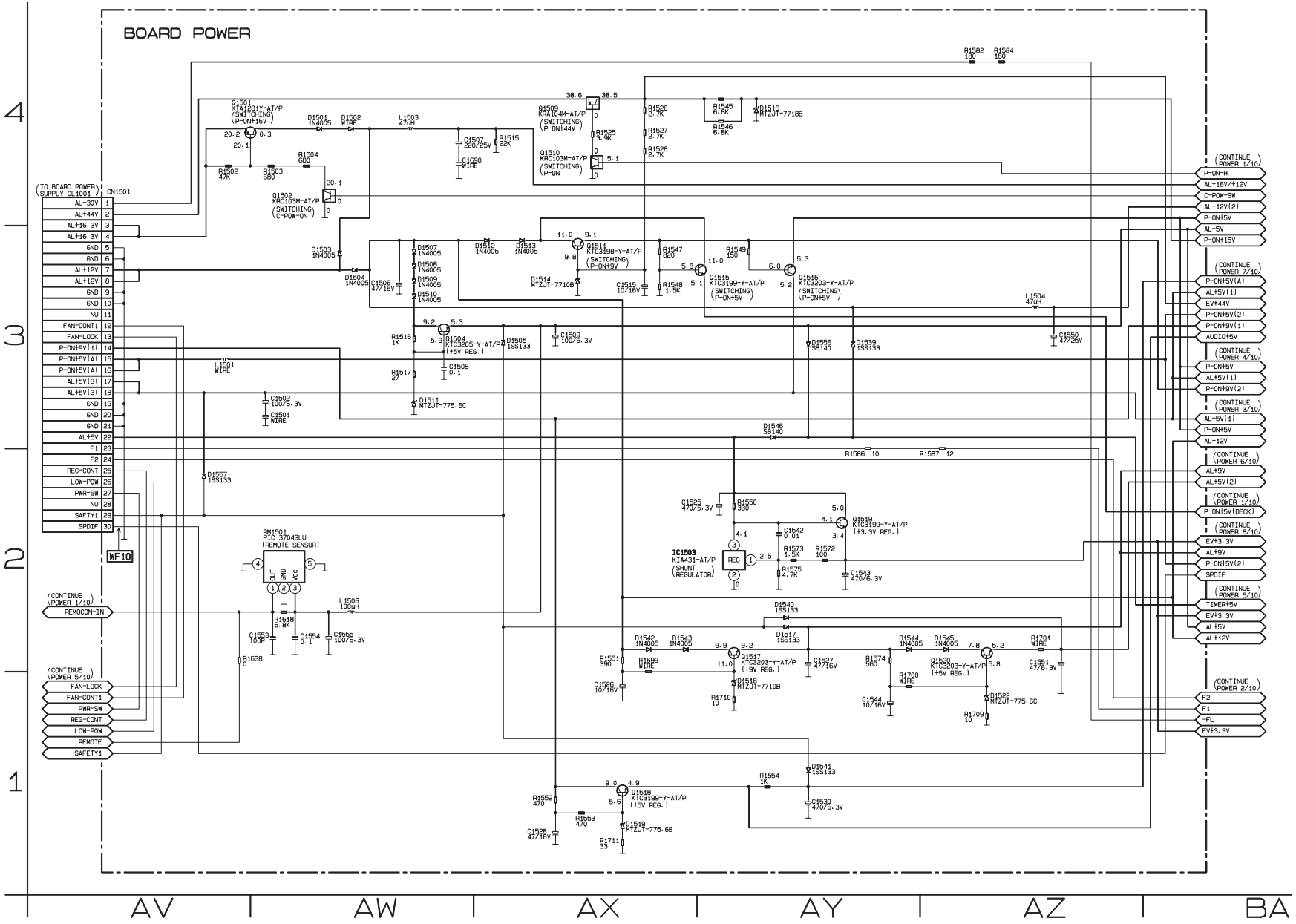
POWER 8/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

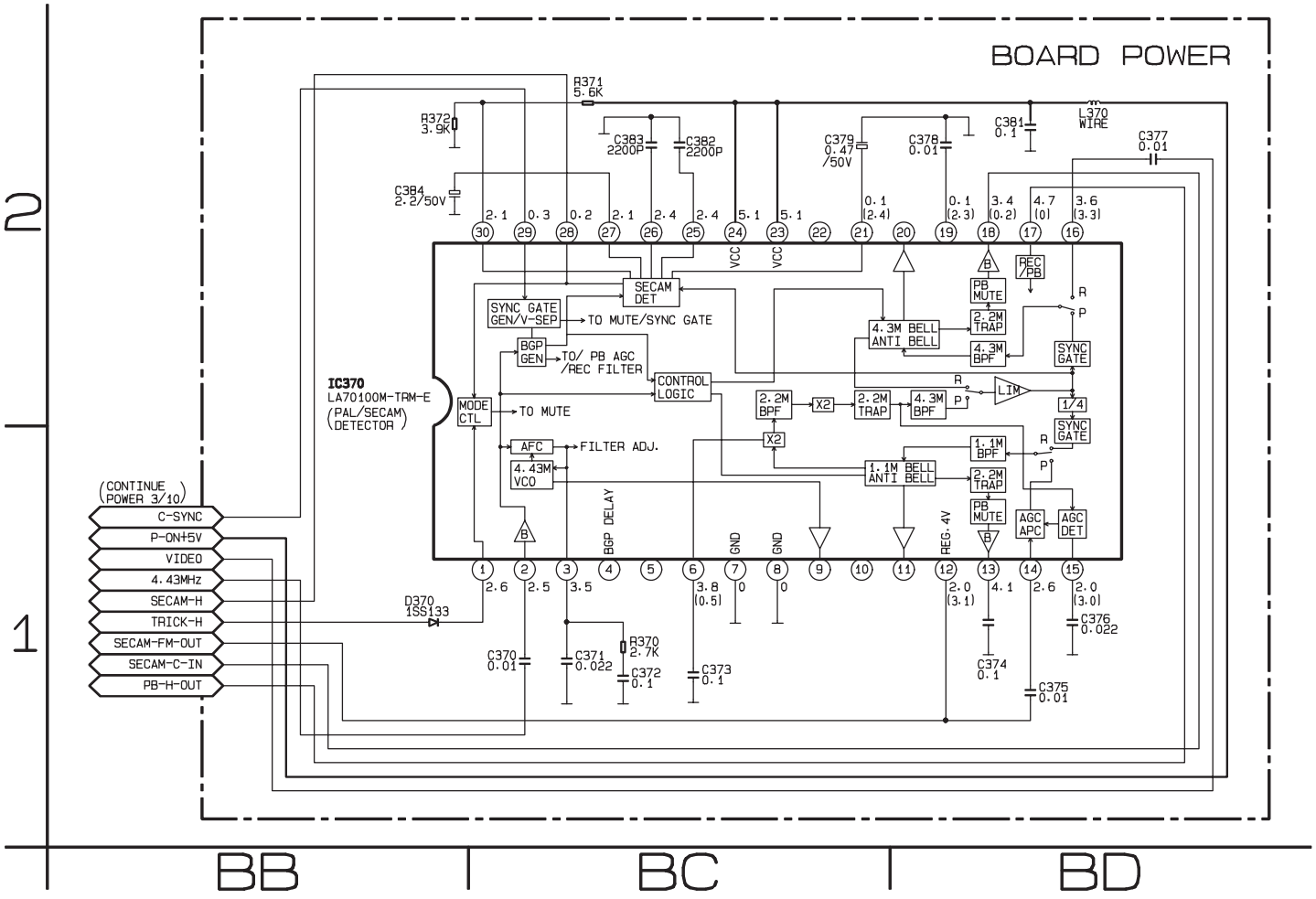


POWER 9/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



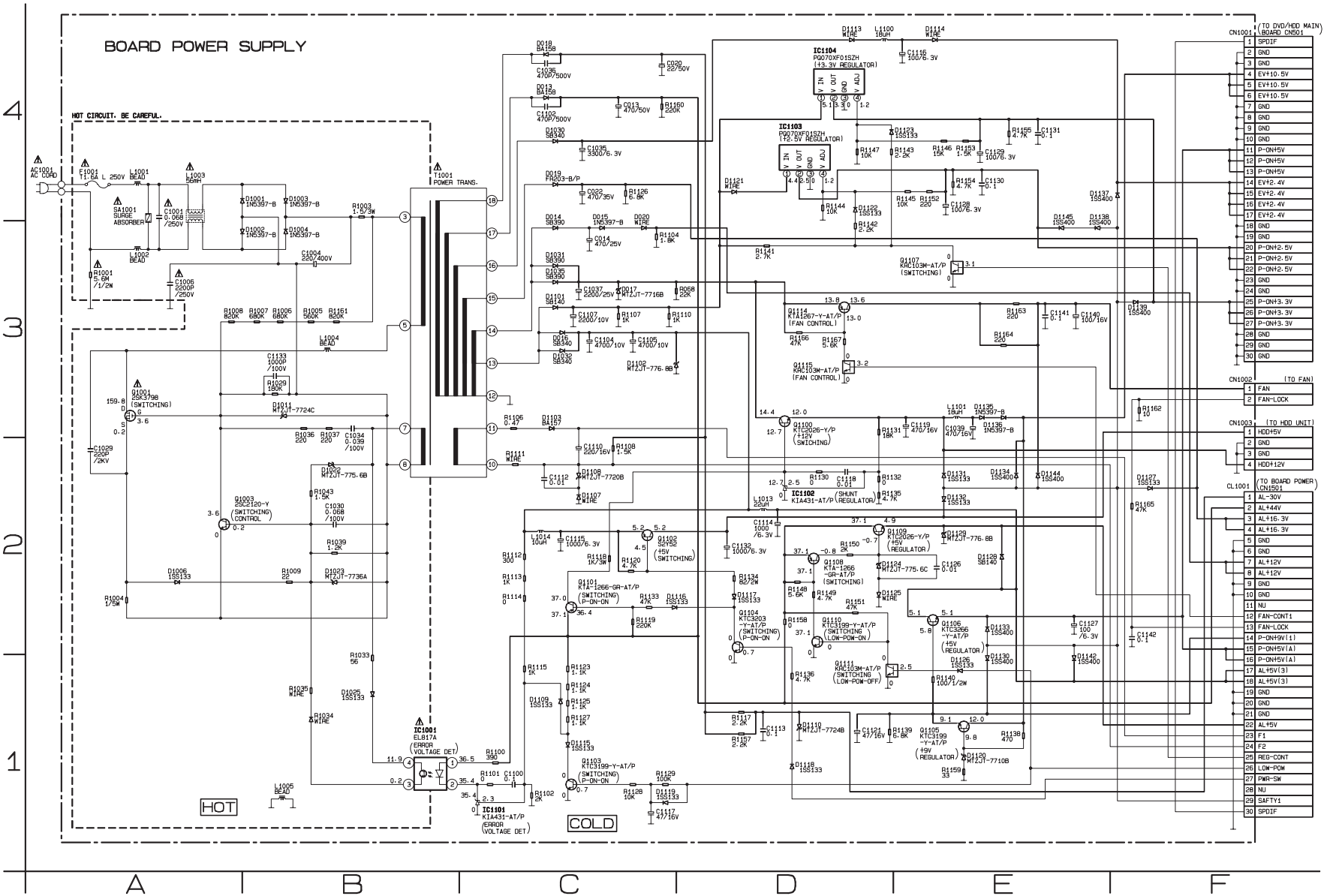
POWER SUPPLY Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

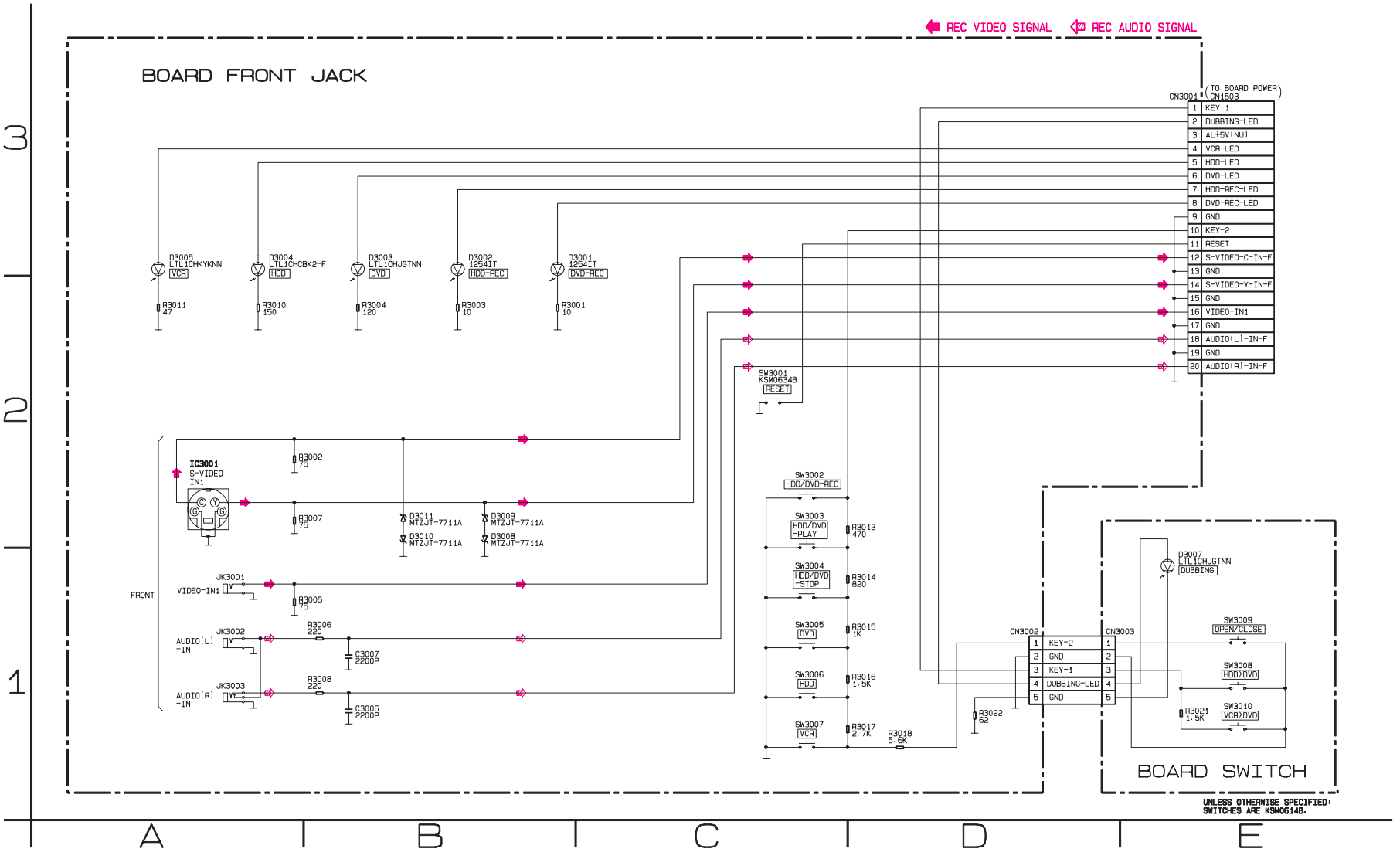
CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



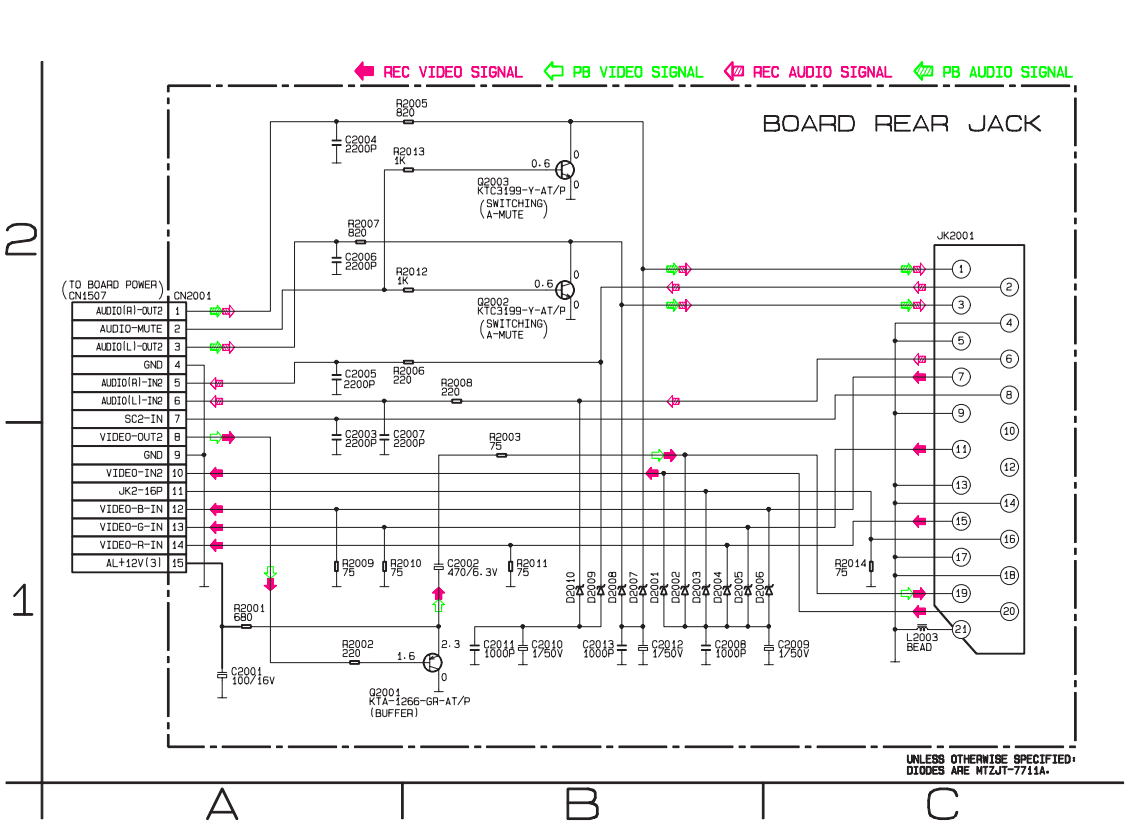
FRONT JACK & SWITCH Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



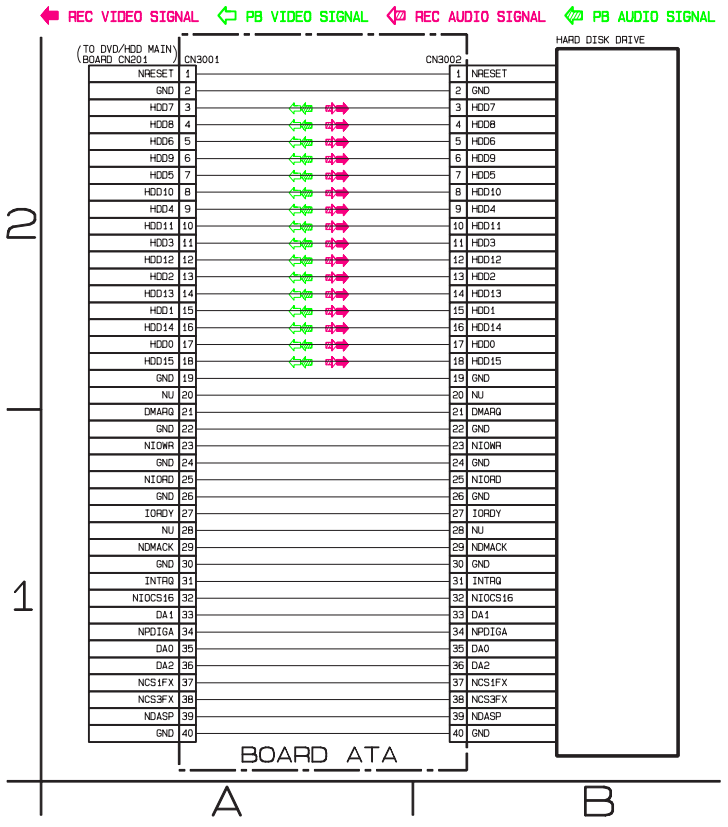
REAR JACK Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



E439ASCRJ

ATA Schematic Diagram < DVD/HDD Section >



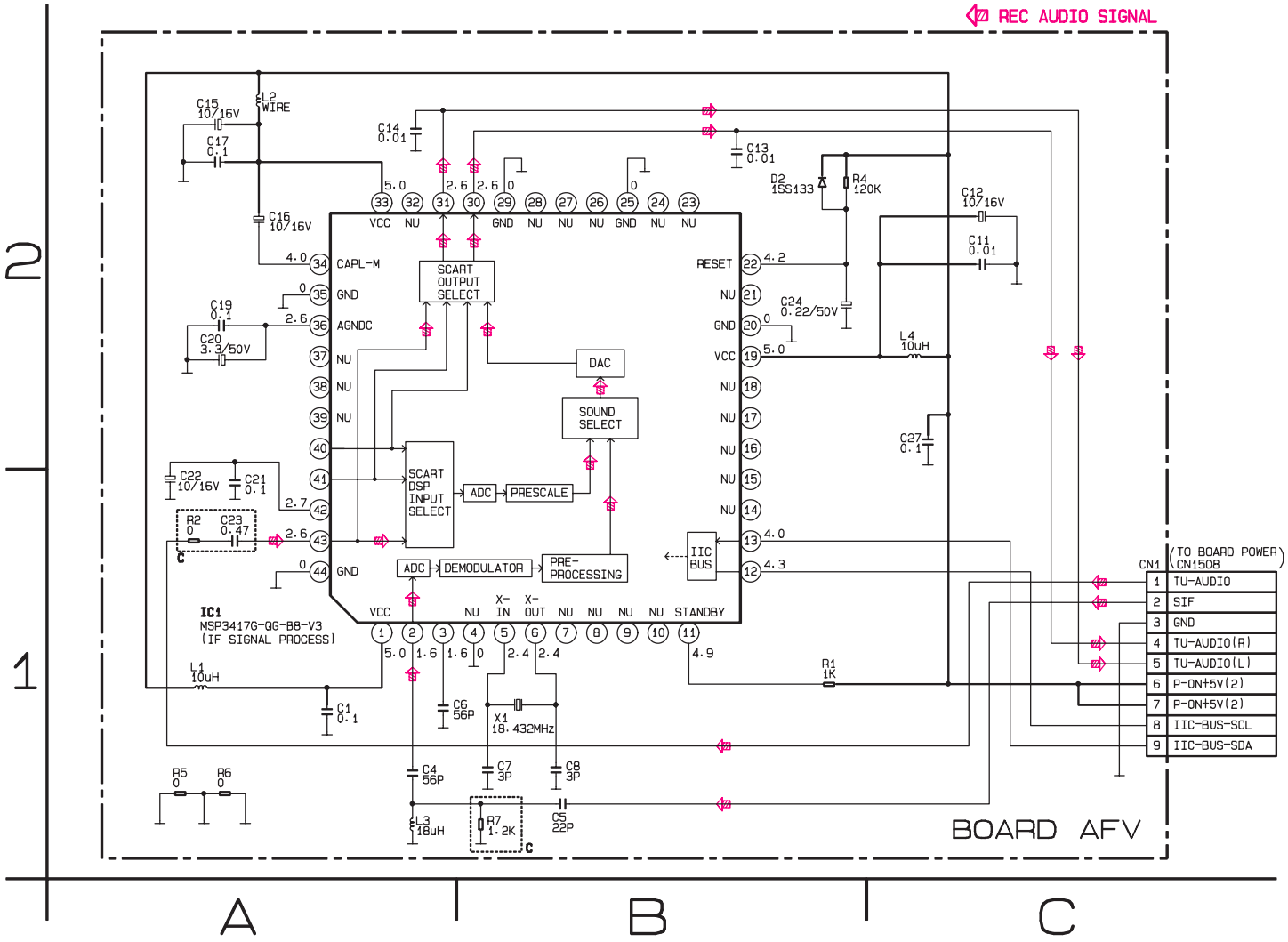
E439ASCAT

AFV Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

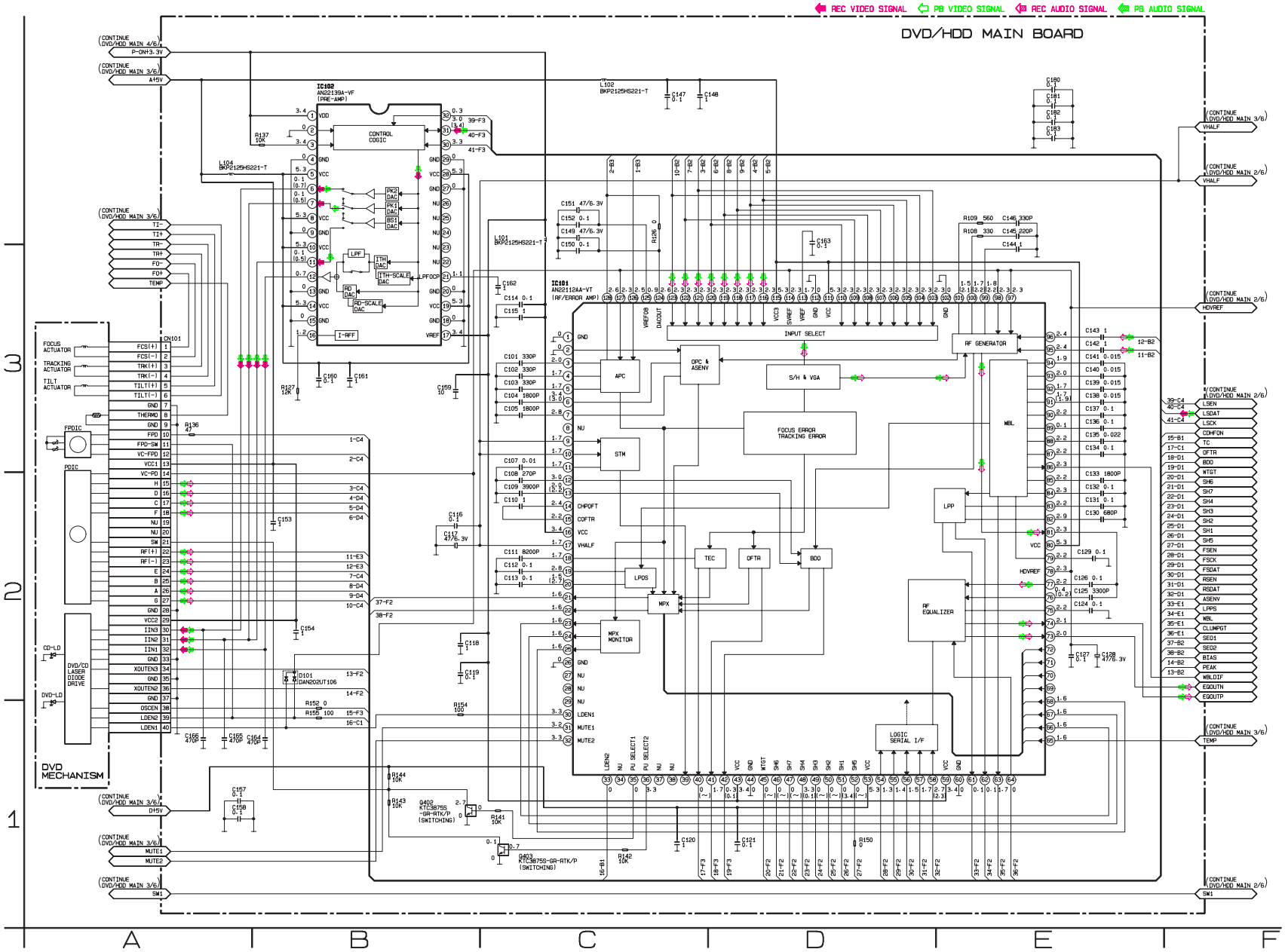
Comparison Chart of Models and Marks

MODEL	MARK
RD-XV45KE	A
RD-XV45KB	B
RD-XV45KF	C



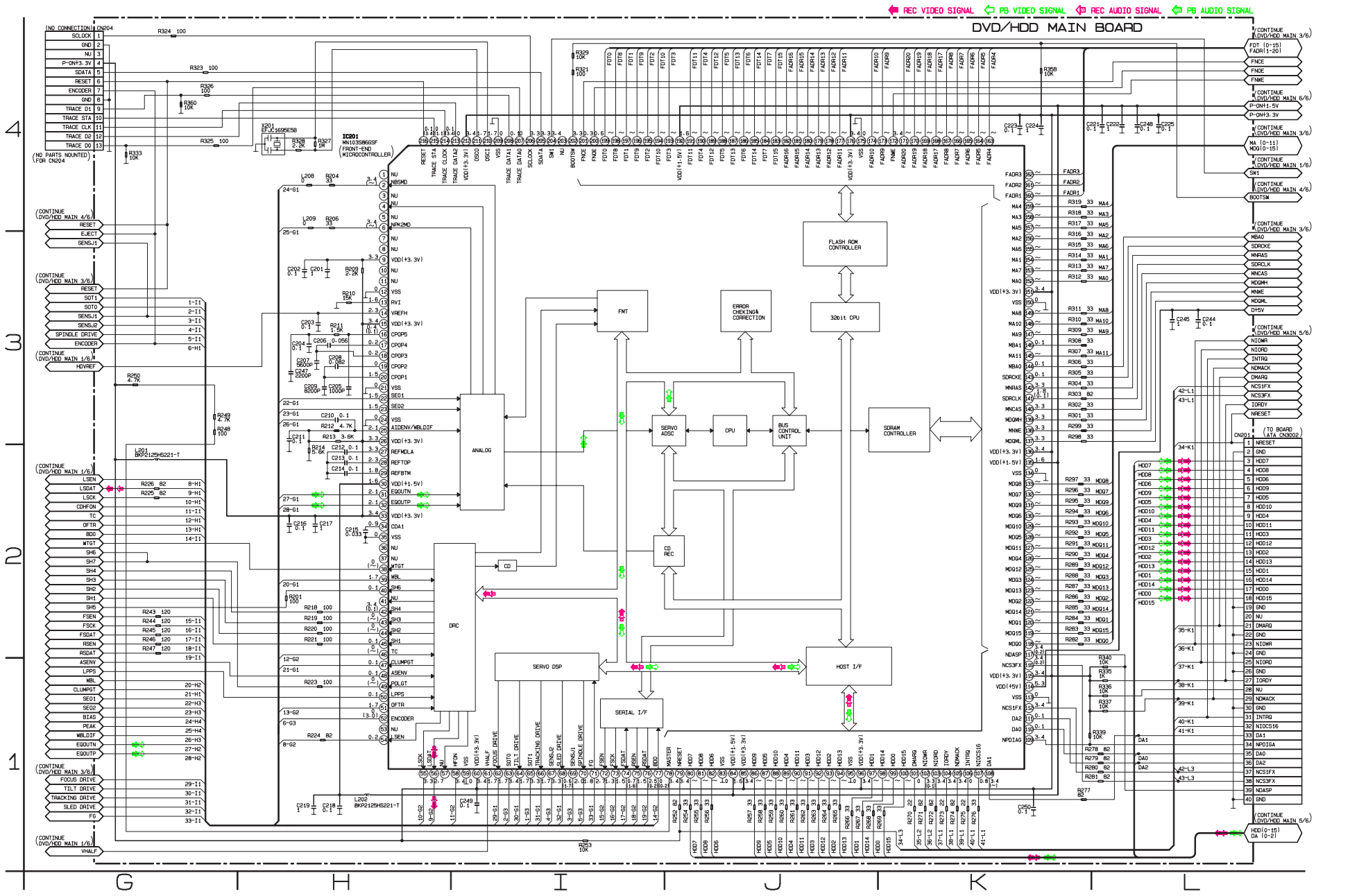
DVD/HDD MAIN 1/6 Schematic Diagram < DVD/HDD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



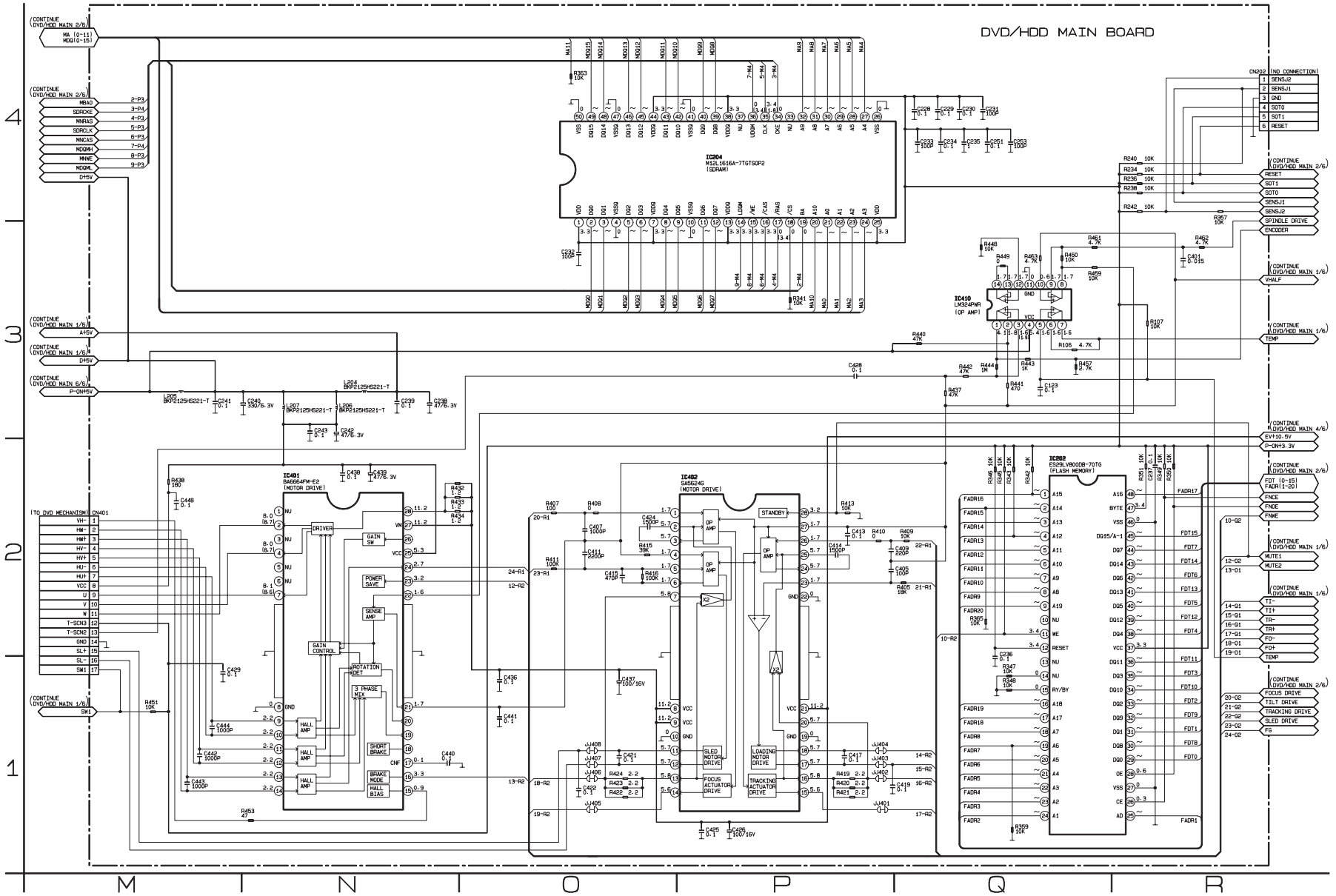
DVD/HDD MAIN 2/6 Schematic Diagram < DVD/HDD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



DVD/HDD MAIN 3/6 Schematic Diagram < DVD/HDD Section >

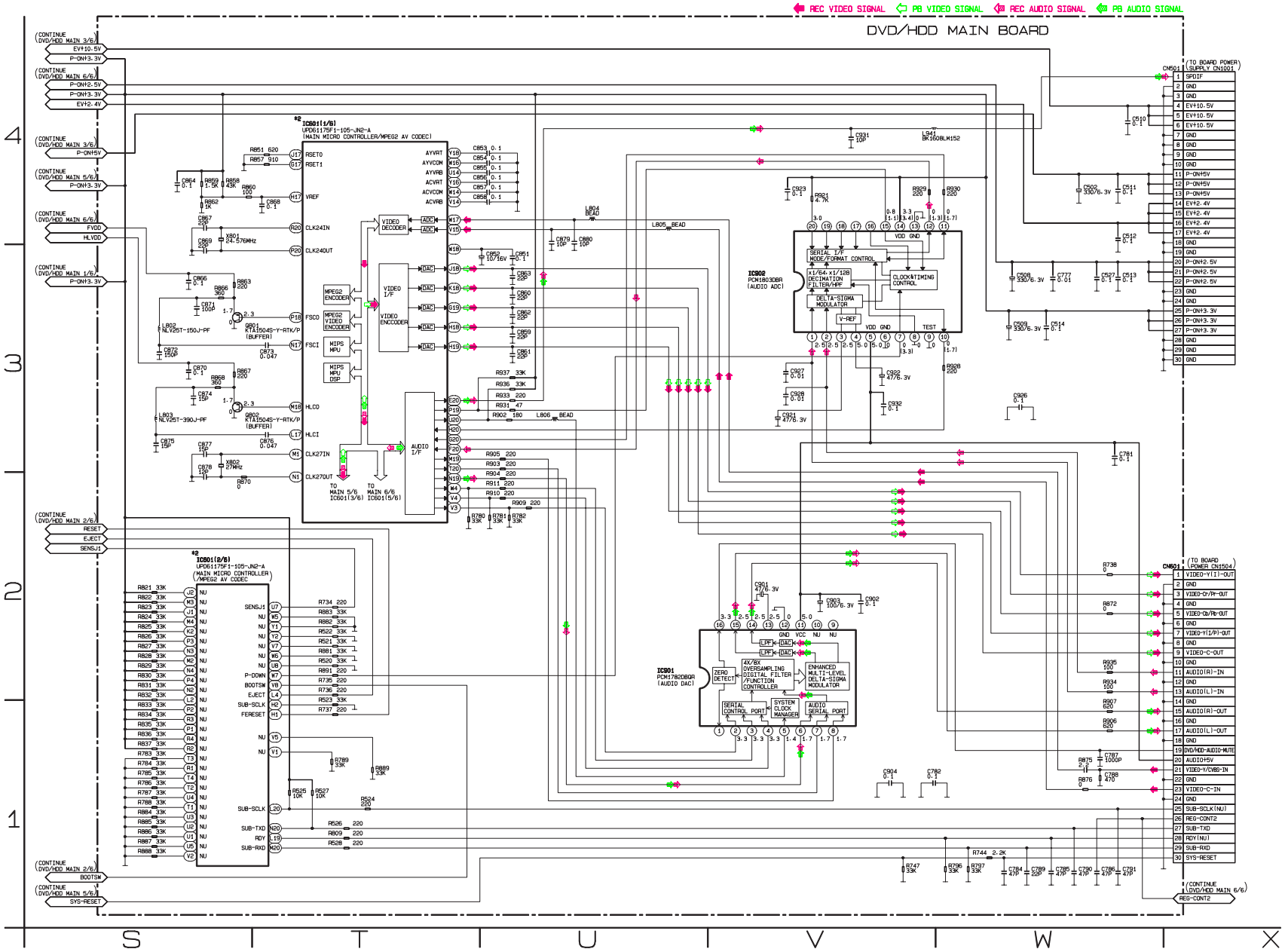
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



DVD/HDD MAIN 4/6 Schematic Diagram < DVD/HDD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

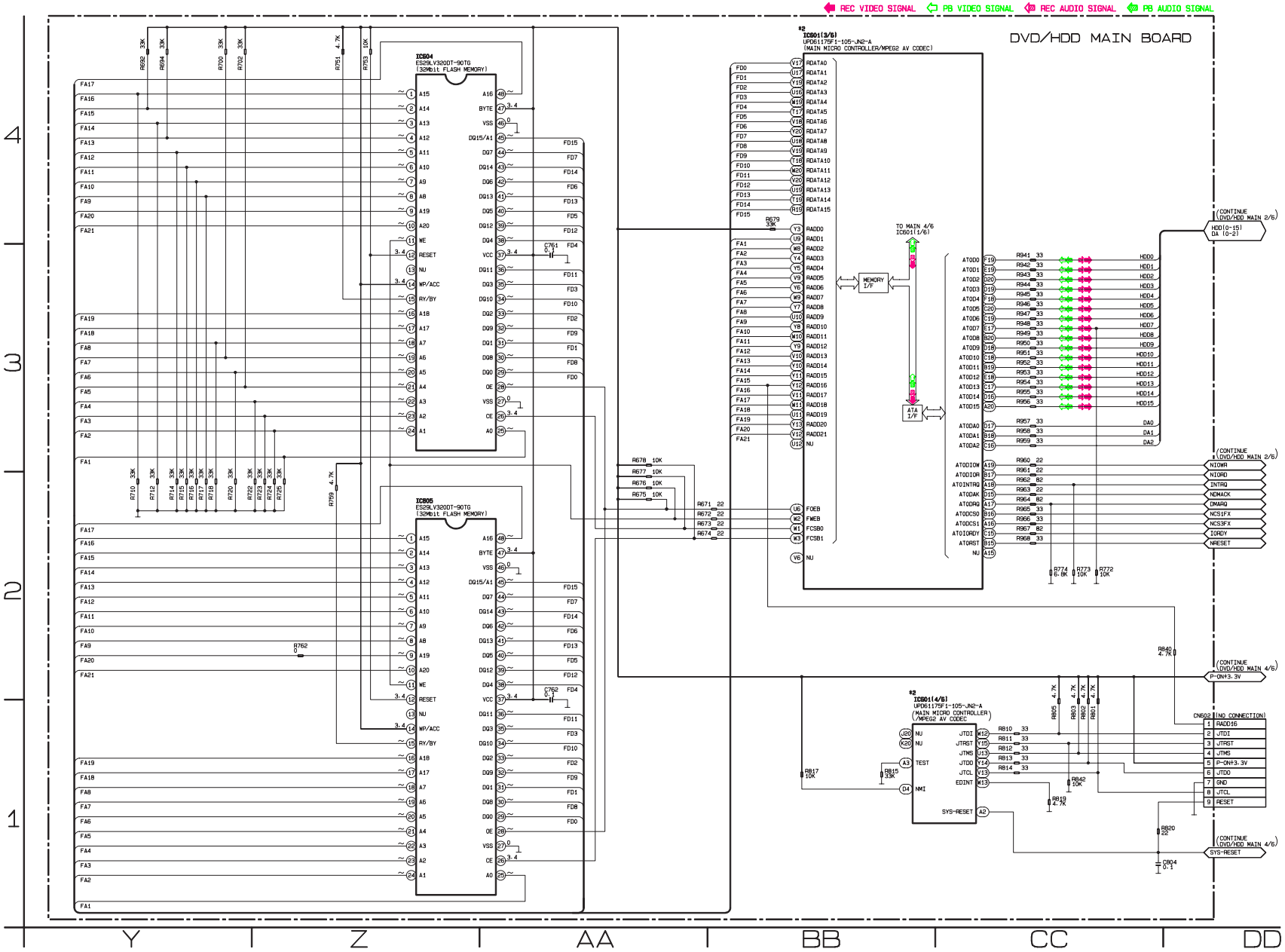
＊2 NOTE:
The order of pins shown in this diagram is different from that of actual IC601.
IC601 is divided into six and shown as IC601 (1/6) ~ IC601 (6/6) in this DVD/HDD Main Schematic Diagram Section.



DVD/HDD MAIN 5/6 Schematic Diagram < DVD/HDD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

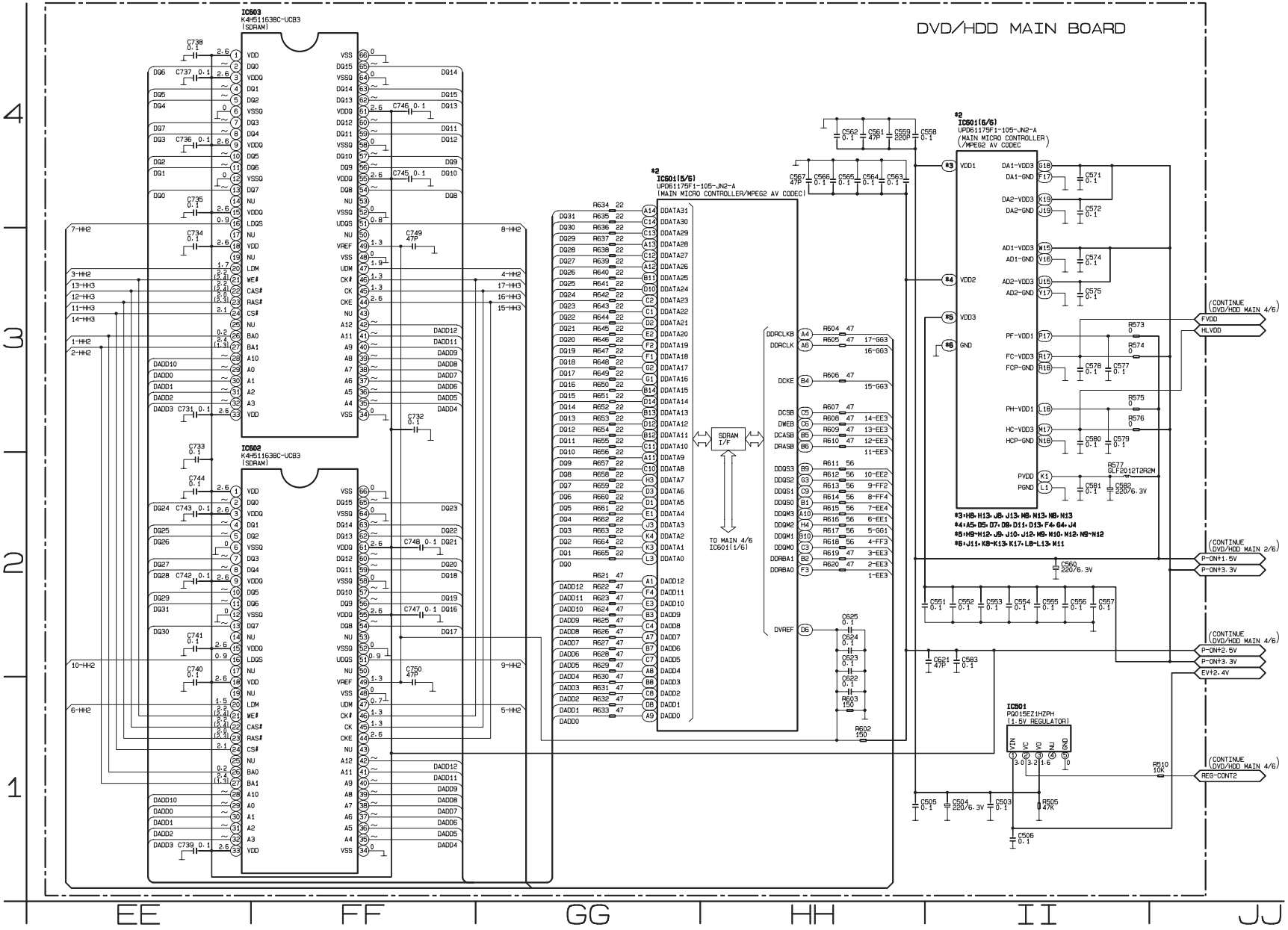
＊2 NOTE:
The order of pins shown in this diagram is different from that of actual IC601.
IC601 is divided into six and shown as IC601 (1/6) ~ IC601 (6/6) in this DVD/HDD Main Schematic Diagram Section.



DVD/HDD MAIN 6/6 Schematic Diagram < DVD/HDD Section >

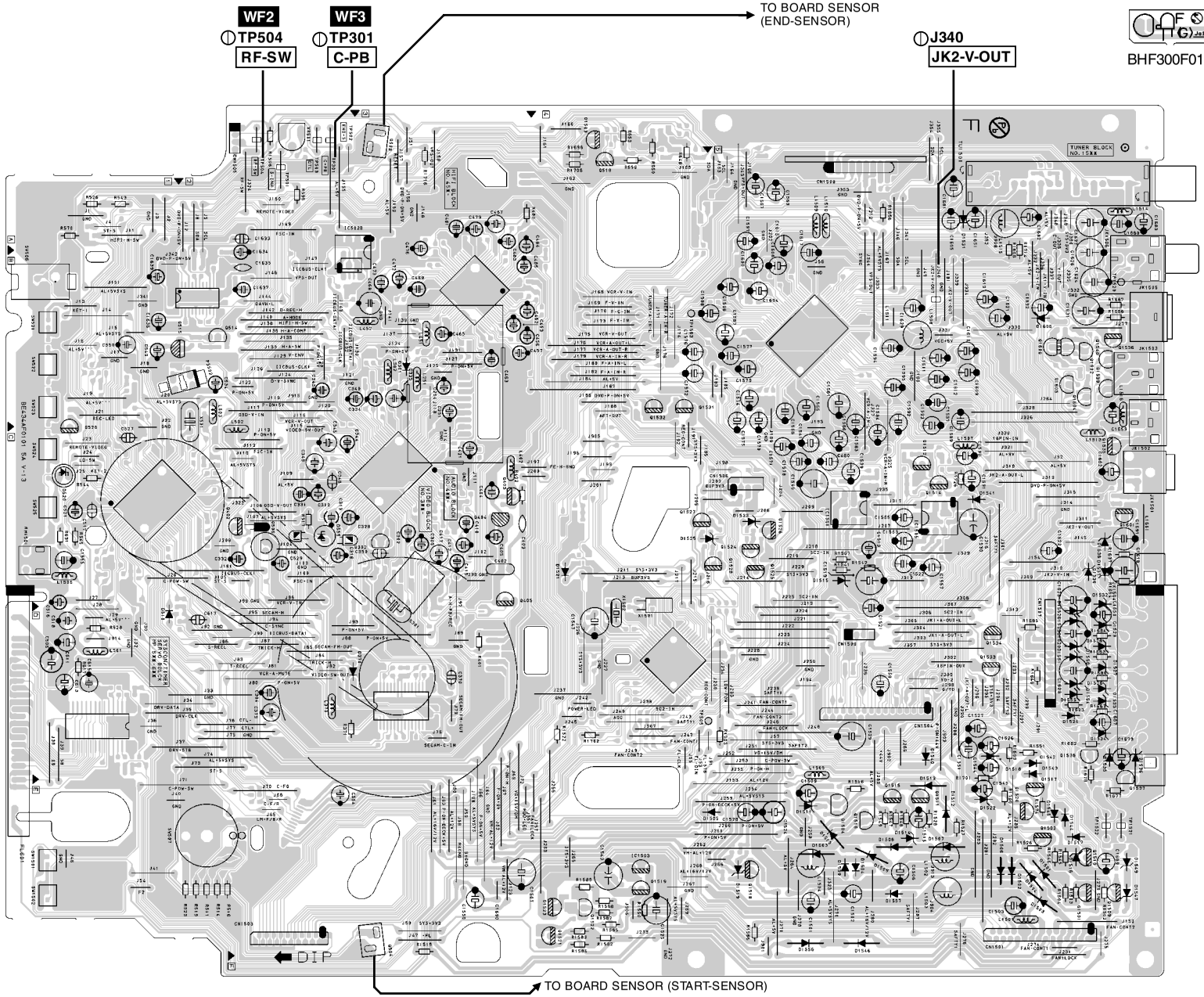
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

＊2 NOTE:
The order of pins shown in this diagram is different from that of actual IC601.
IC601 is divided into six and shown as IC601 (1/6) ~ IC601 (6/6) in this DVD/HDD Main Schematic Diagram Section.

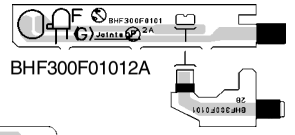


BOARD POWER Top View

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



BOARD SENSOR Top View



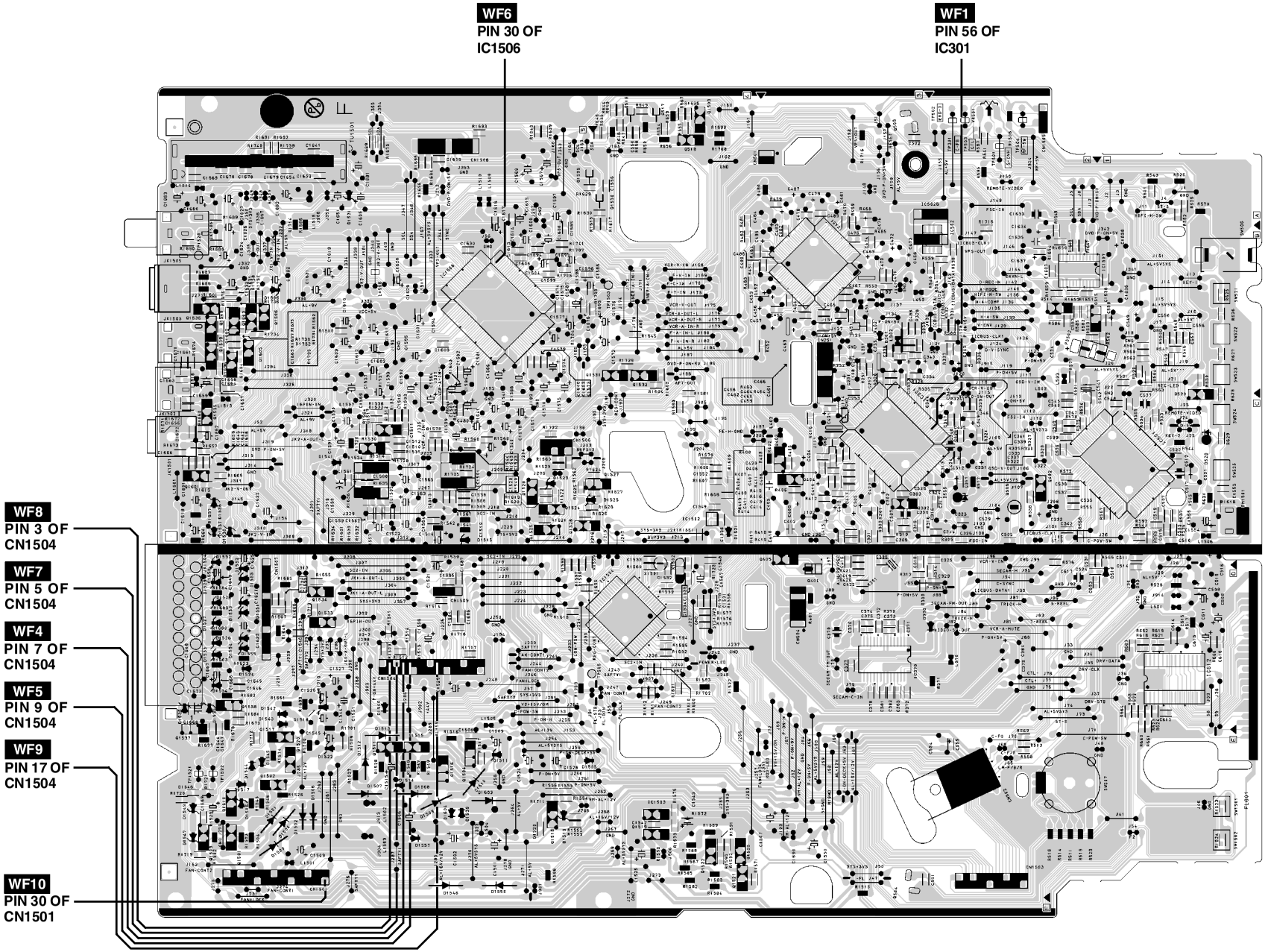
BHF300F01012A

BHF300F01012B

BE434AF01015A

BOARD POWER Bottom View

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



BOARD POWER SUPPLY Top View

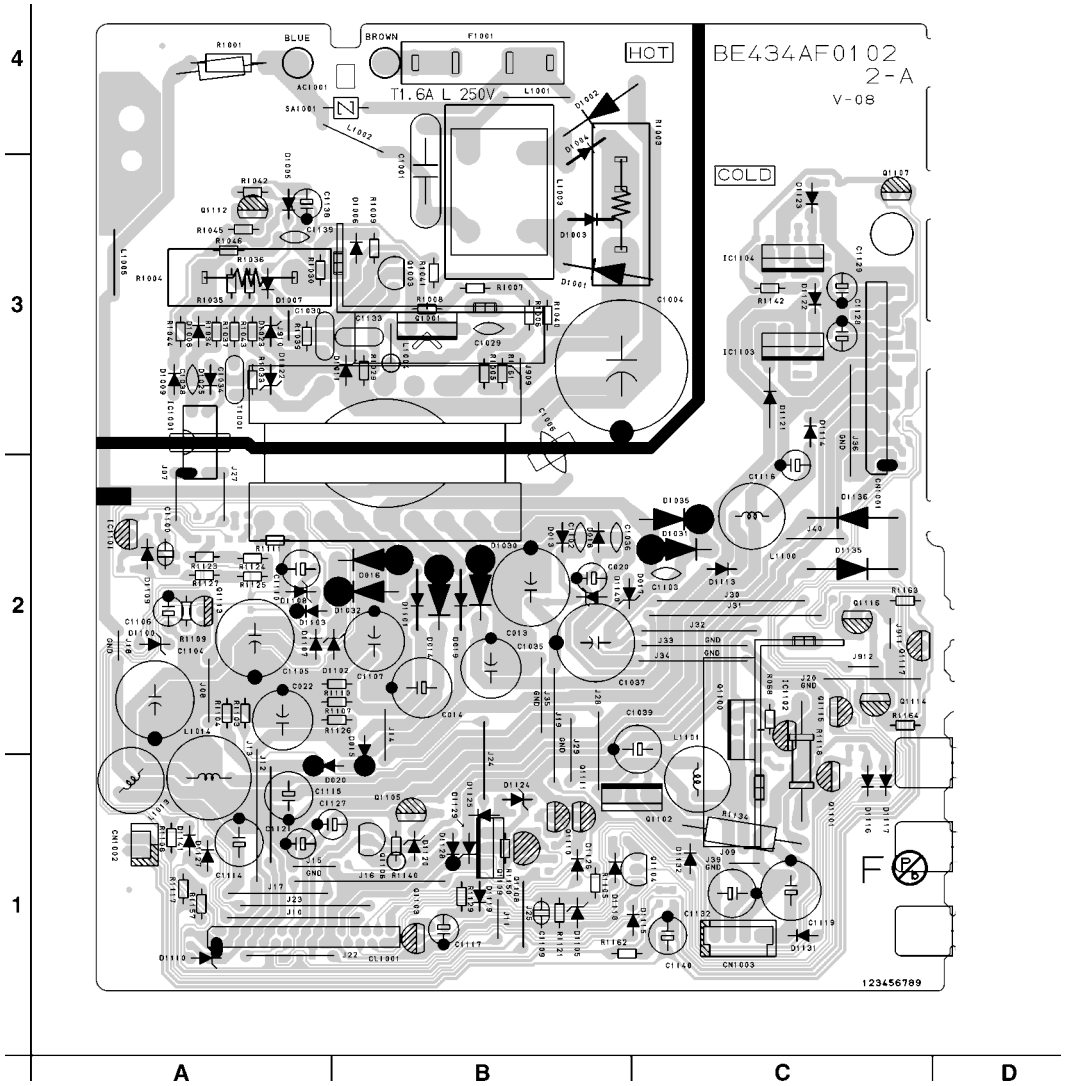
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.



BOARD POWER SUPPLY Bottom View

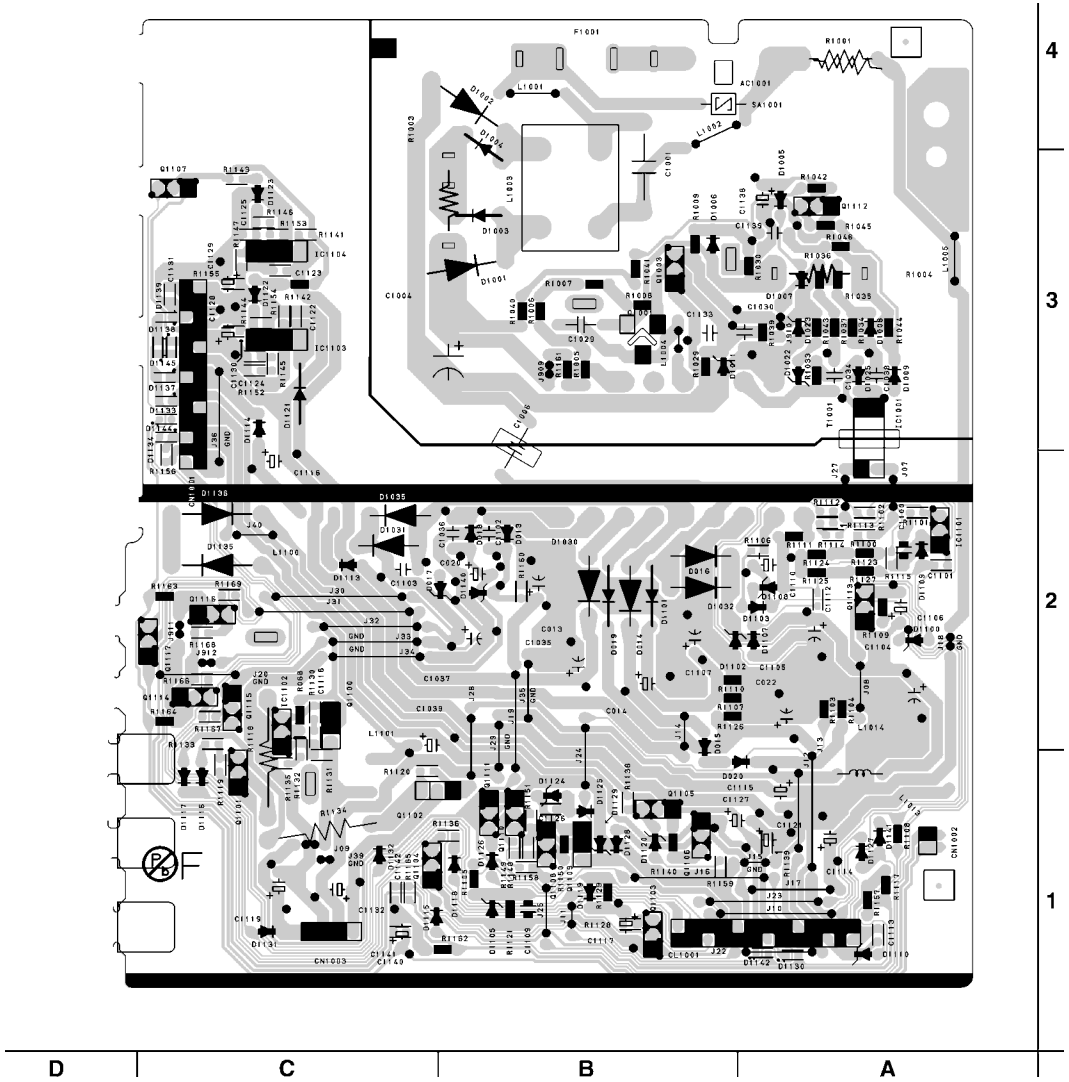
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

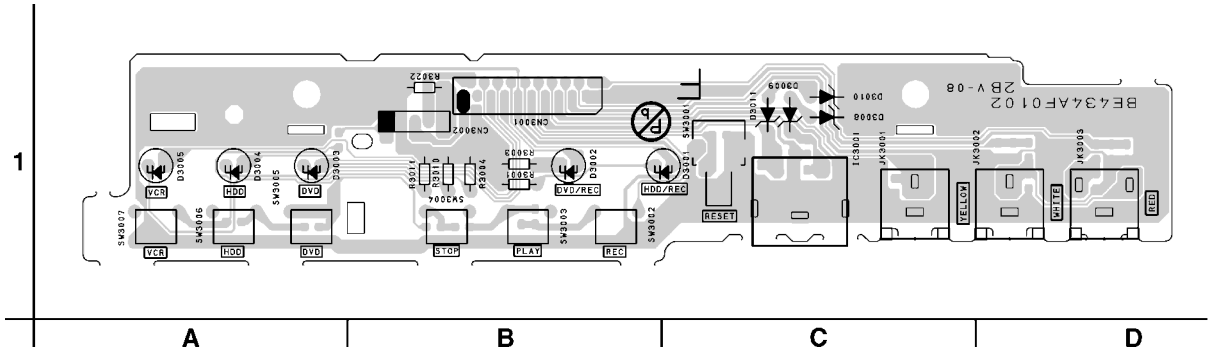
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.

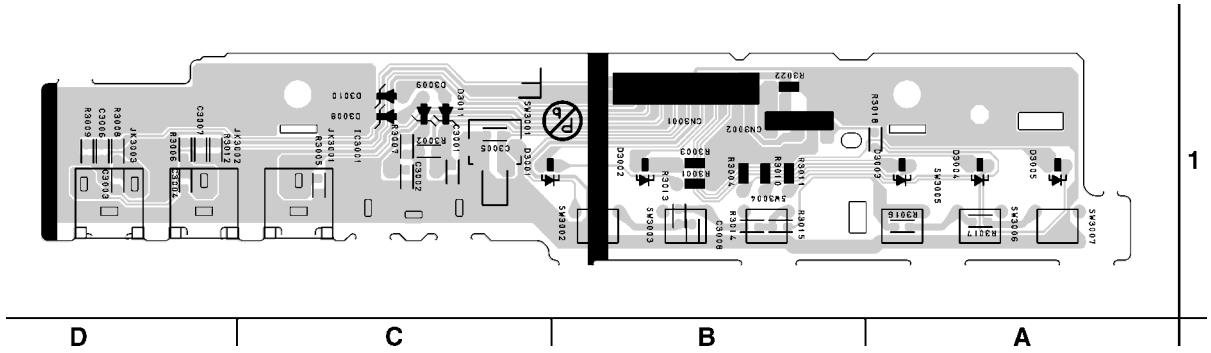


BOARD FRONT JACK Top View

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



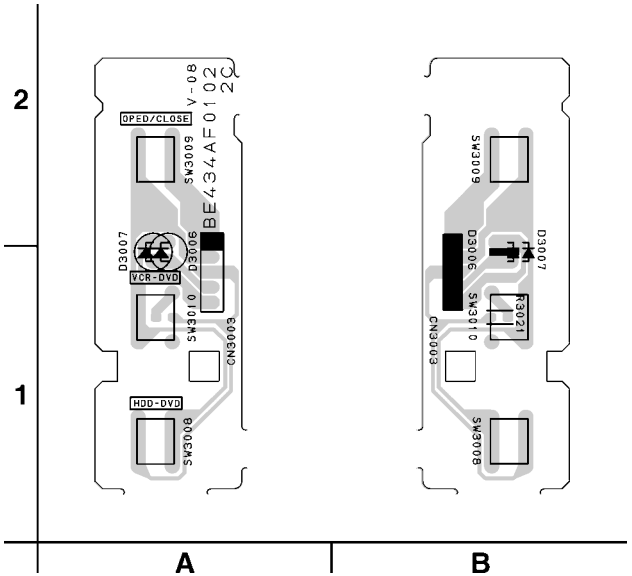
BOARD FRONT JACK Bottom View



BE434AF01022B

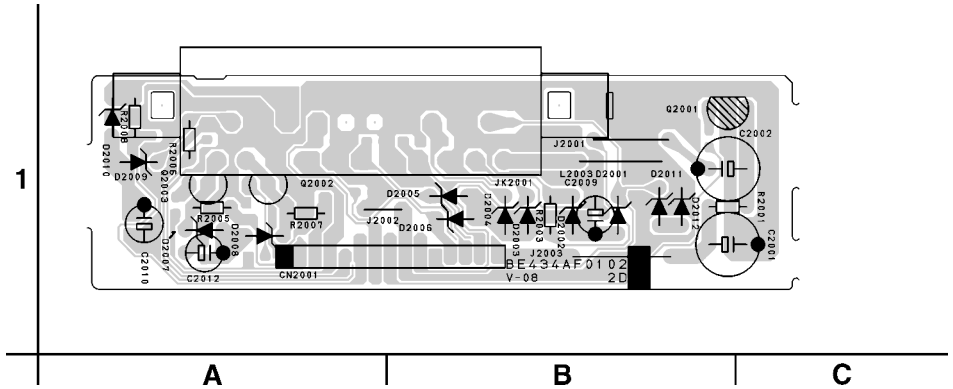
BOARD SWITCH Top View

BOARD SWITCH Bottom View



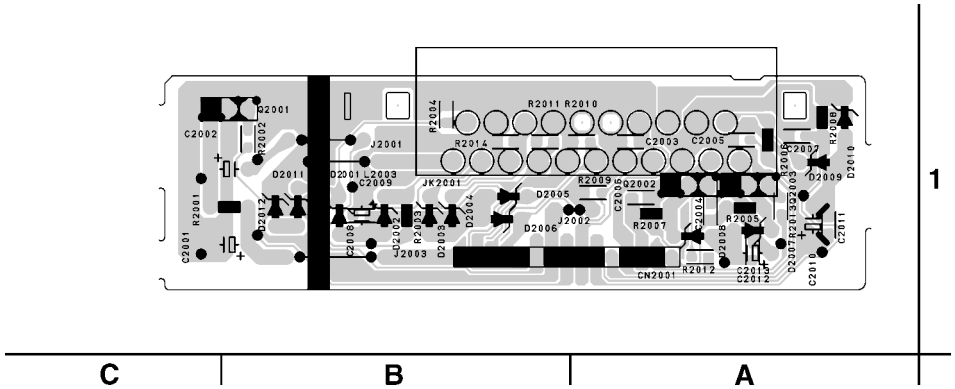
BE434AF01022C

BOARD REAR JACK Top View



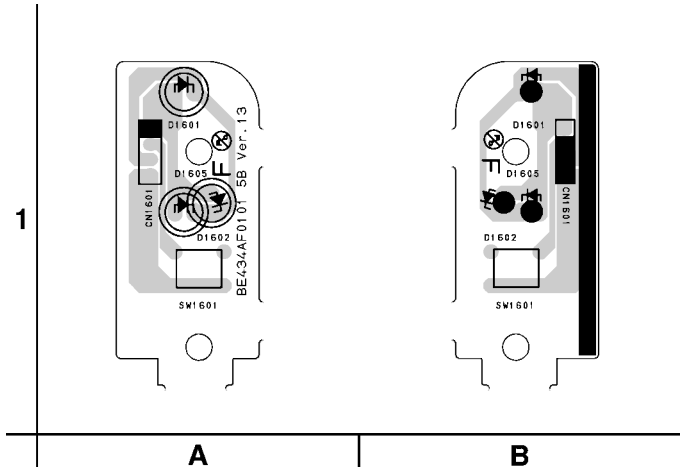
BOARD REAR JACK Bottom View

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



BE434AF01022D

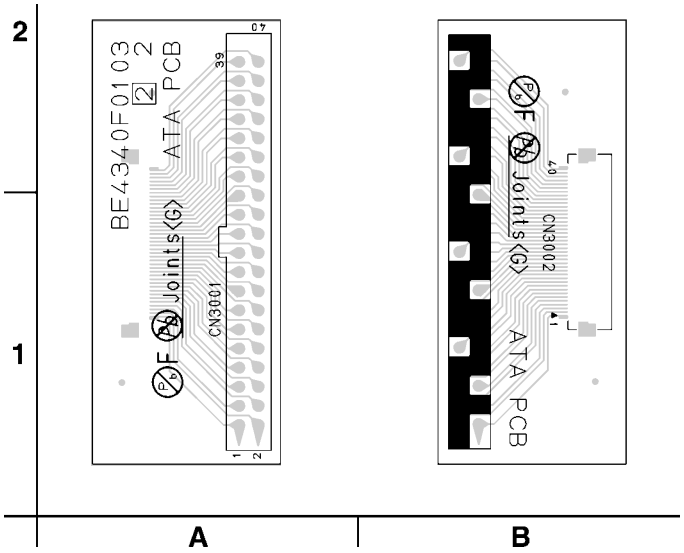
BOARD POWER SWITCH Top View



BOARD POWER SWITCH Bottom View

BE434AF01015B

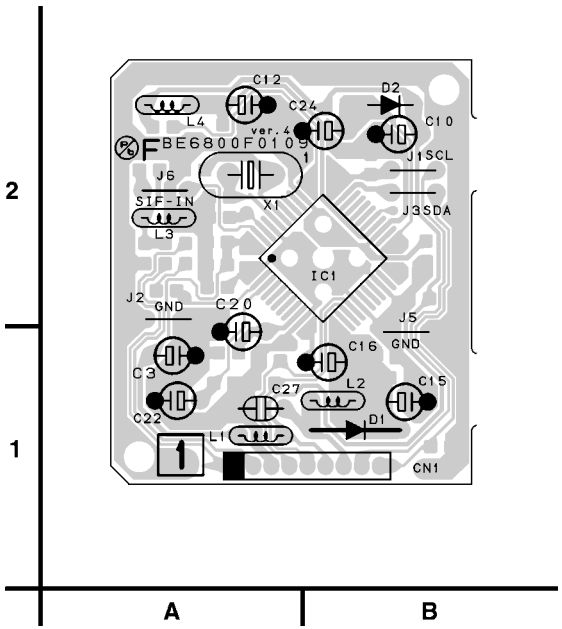
BOARD ATA Top View



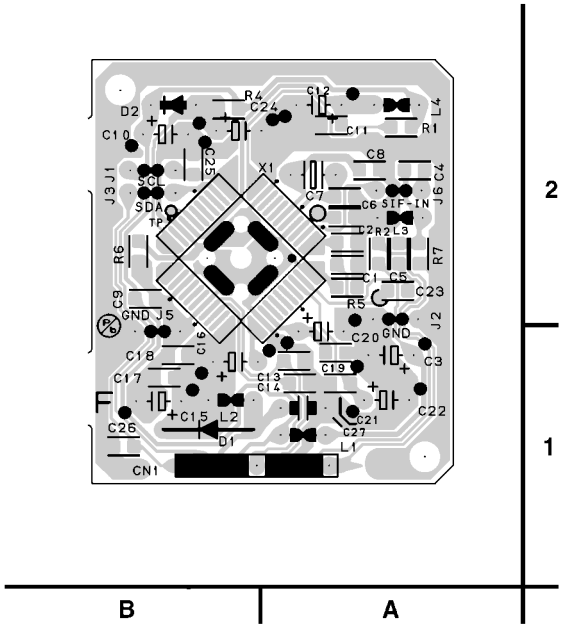
BOARD ATA Bottom View

BE4340F01032

BOARD AFV Top View



BOARD AFV Bottom View

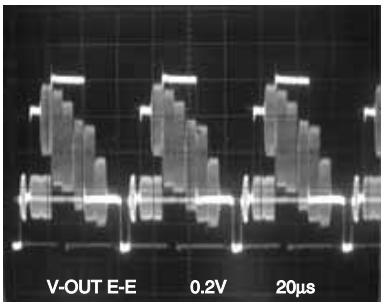


NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

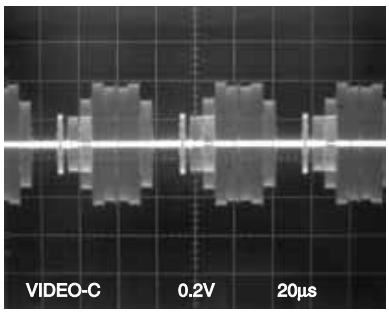
WAVEFORMS

NOTE:
Input: COLOR BAR SIGNAL (WITH 1KHz AUDIO SIGNAL)

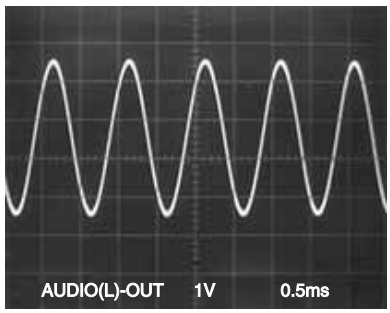
WF1 Pin 56 of IC301



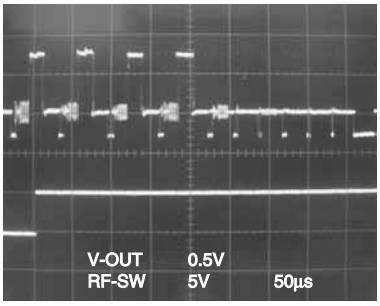
WF5 Pin 9 of CN1504



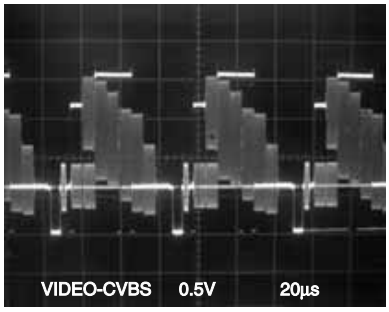
WF9 Pin 17 of CN1504



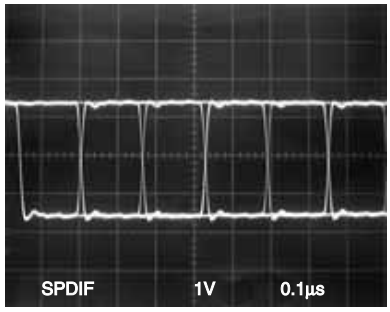
WF1 UPPER Pin 56 of IC301
WF2 LOWER TP504



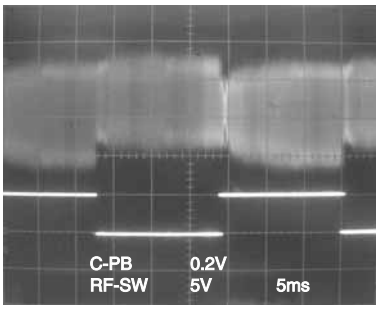
WF6 Pin 30 of IC1506



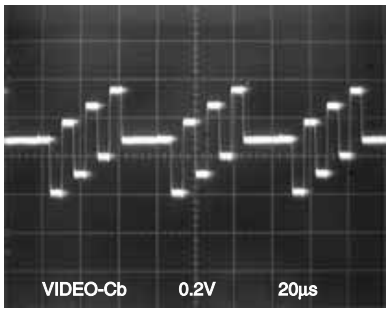
WF10 Pin 30 of CN1501



WF3 UPPER TP301
WF2 LOWER TP504



WF7 Pin 5 of CN1504



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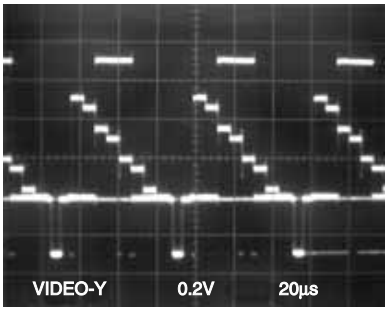
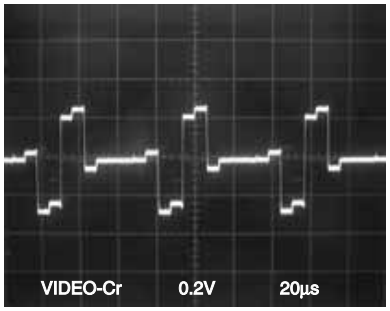
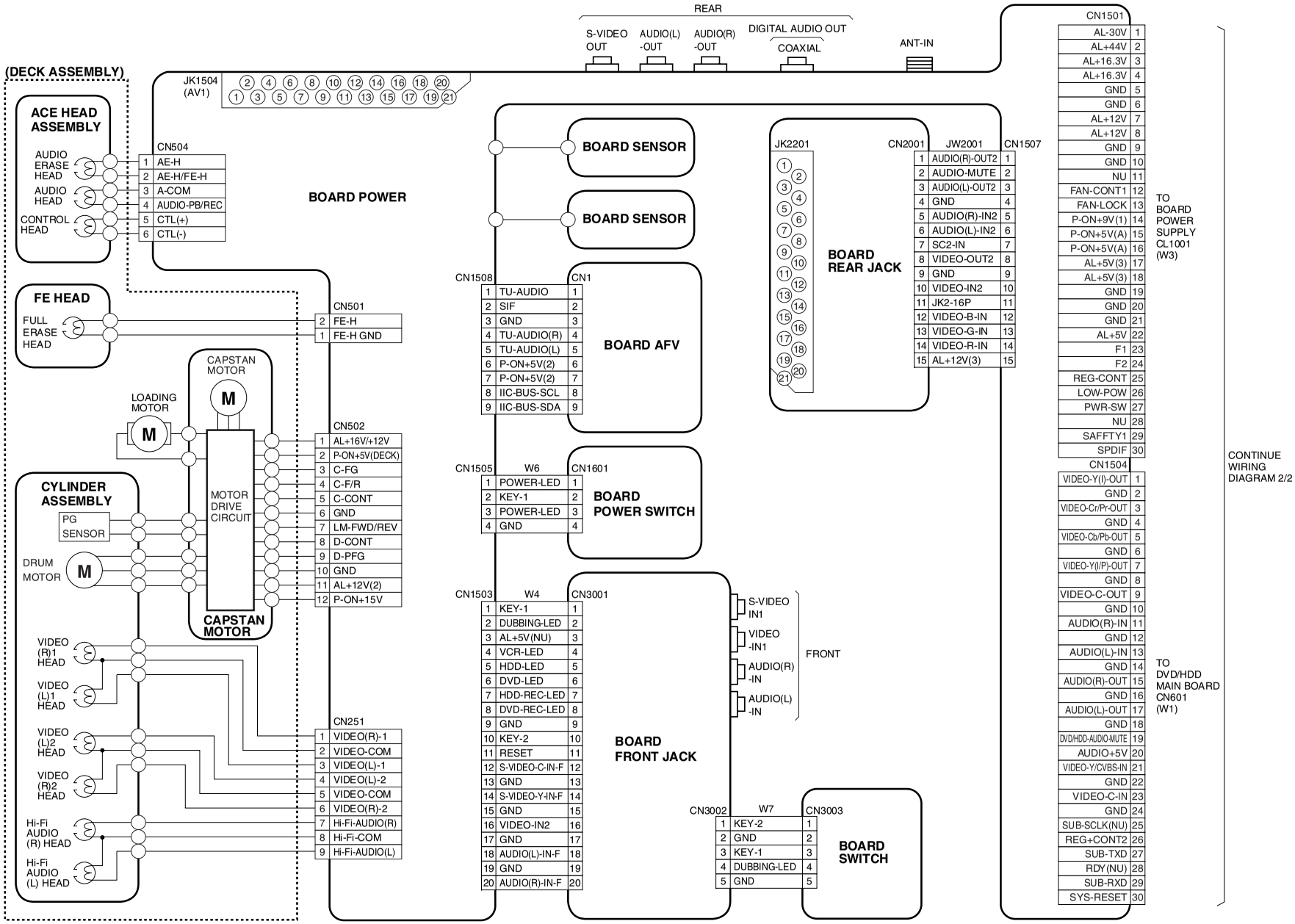


WF8 Pin 3 of CN1504



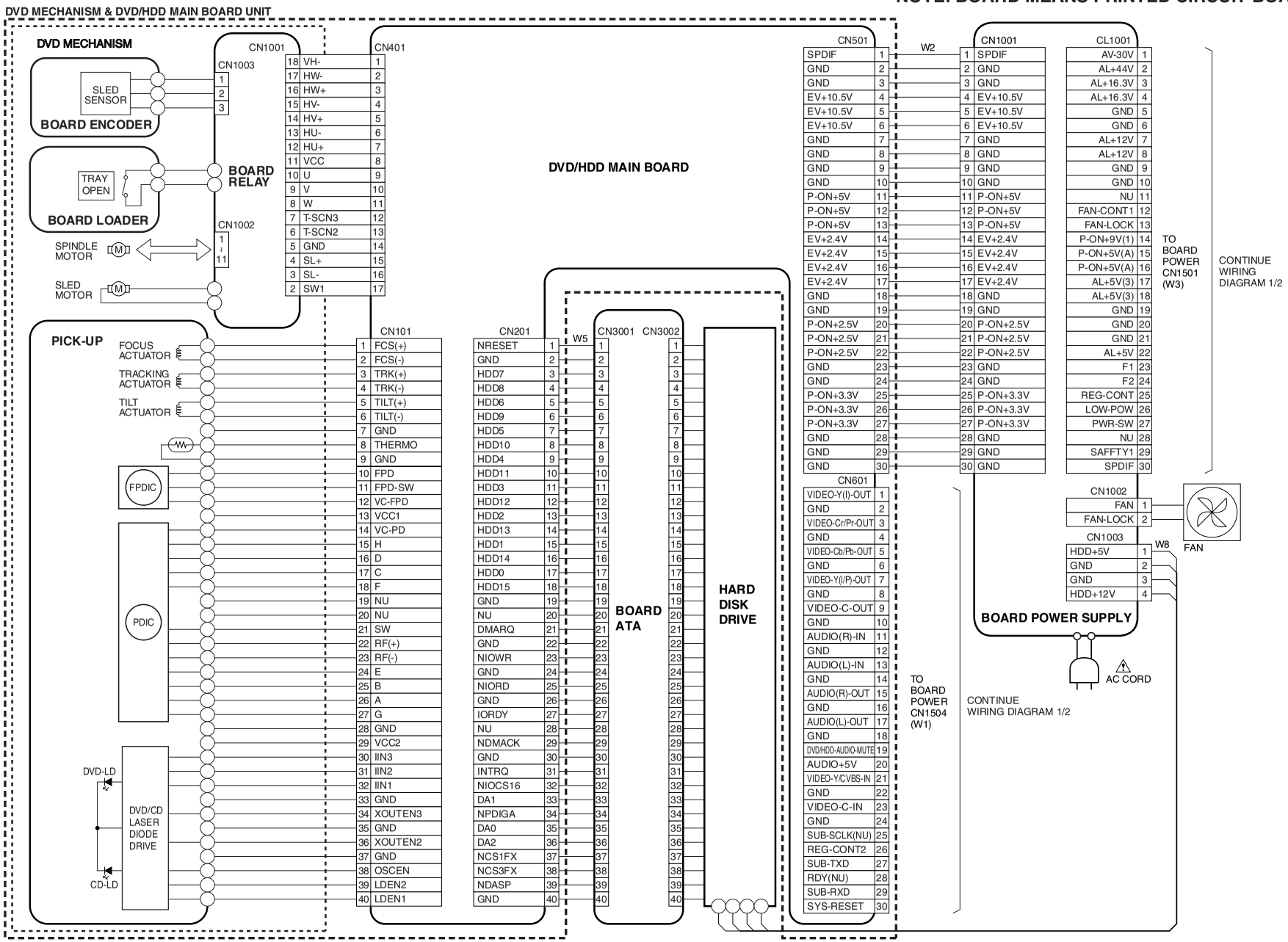
WIRING DIAGRAM

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



WIRING DIAGRAM

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



CN1001		CN401
18	VH-	1
17	HW-	2
16	HW+	3
15	HV-	4
14	HV+	5
13	HU-	6
12	HU+	7
11	VCC	8
10	U	9
9	V	10
8	W	11
7	T-SCN3	12
6	T-SCN2	13
5	GND	14
4	SL+	15
3	SL-	16
2	SW1	17

CN101	
1	FCS(+)
2	FCS(-)
3	TRK(+)
4	TRK(-)
5	TILT(+)
6	TILT(-)
7	GND
8	THERMO
9	GND
10	FPD
11	FPD-SW
12	VC-FPD
13	VCC1
14	VC-PD
15	H
16	D
17	C
18	F
19	NU
20	NU
21	SW
22	RF(+)
23	RF(-)
24	E
25	B
26	A
27	G
28	GND
29	VCC2
30	IIN3
31	IIN2
32	IIN1
33	GND
34	XOUTEN3
35	GND
36	XOUTEN2
37	GND
38	OSCEN
39	LDEN2
40	LDEN1

CN201	
1	NRESET
2	GND
3	HDD7
4	HDD8
5	HDD6
6	HDD9
7	HDD5
8	HDD10
9	HDD4
10	HDD11
11	HDD3
12	HDD12
13	HDD2
14	HDD13
15	HDD1
16	HDD14
17	HDD0
18	HDD15
19	GND
20	NU
21	DMARQ
22	GND
23	NIOWR
24	GND
25	NIORD
26	GND
27	IORDY
28	NU
29	NDMACK
30	GND
31	INTRQ
32	NIOCS16
33	DA1
34	NPDIGA
35	DA0
36	DA2
37	NCS1FX
38	NCS3FX
39	NDASP
40	GND

W5	CN3001	CN3002
	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
	7	7
	8	8
	9	9
	10	10
	11	11
	12	12
	13	13
	14	14
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	31	31
	32	32
	33	33
	34	34
	35	35
	36	36
	37	37
	38	38
	39	39
	40	40

CN501	
SPDIF	1
GND	2
GND	3
EV+10.5V	4
EV+10.5V	5
EV+10.5V	6
GND	7
GND	8
GND	9
GND	10
P-ON+5V	11
P-ON+5V	12
P-ON+5V	13
EV+2.4V	14
EV+2.4V	15
EV+2.4V	16
EV+2.4V	17
GND	18
GND	19
P-ON+2.5V	20
P-ON+2.5V	21
P-ON+2.5V	22
GND	23
GND	24
P-ON+3.3V	25
P-ON+3.3V	26
P-ON+3.3V	27
GND	28
GND	29
GND	30

CN601	
VIDEO-Y(I)-OUT	1
GND	2
VIDEO-Cr/Pr-OUT	3
GND	4
VIDEO-Cb/Pb-OUT	5
GND	6
VIDEO-Y(I/P)-OUT	7
GND	8
VIDEO-C-OUT	9
GND	10
AUDIO(R)-IN	11
GND	12
AUDIO(L)-IN	13
GND	14
AUDIO(R)-OUT	15
GND	16
AUDIO(L)-OUT	17
GND	18
DVD/HDD-AUDIO-MUTE	19
AUDIO+5V	20
VIDEO-Y/CVBS-IN	21
GND	22
VIDEO-C-IN	23
GND	24
SUB-SCLK(NU)	25
REG-CONT2	26
SUB-TXD	27
RDY(NU)	28
SUB-RXD	29
SYS-RESET	30

W2	CN1001
1	SPDIF
2	GND
3	GND
4	EV+10.5V
5	EV+10.5V
6	EV+10.5V
7	GND
8	GND
9	GND
10	GND
11	P-ON+5V
12	P-ON+5V
13	P-ON+5V
14	EV+2.4V
15	EV+2.4V
16	EV+2.4V
17	EV+2.4V
18	GND
19	GND
20	P-ON+2.5V
21	P-ON+2.5V
22	P-ON+2.5V
23	GND
24	GND
25	P-ON+3.3V
26	P-ON+3.3V
27	P-ON+3.3V
28	GND
29	GND
30	GND

CL1001	
AV-30V	1
AL+44V	2
AL+16.3V	3
AL+16.3V	4
GND	5
GND	6
AL+12V	7
AL+12V	8
GND	9
GND	10
NU	11
FAN-CONT1	12
FAN-LOCK	13
P-ON+9V(1)	14
P-ON+5V(A)	15
P-ON+5V(A)	16
AL+5V(3)	17
AL+5V(3)	18
GND	19
GND	20
GND	21
AL+5V	22
F1	23
F2	24
REG-CONT	25
LOW-POW	26
PWR-SW	27
NU	28
SAFFTY1	29
SPDIF	30

CN1002	
FAN	1
FAN-LOCK	2

CN1003	
HDD+5V	1
GND	2
GND	3
HDD+12V	4

IC PIN FUNCTION DESCRIPTIONS

< VCR Section >

Comparison Chart of Models and Marks

Model	Mark
RD-XV45KE	A
RD-XV45KB	B
RD-XV45KF	C

IC501(SERVO / SYSTEM CONTROL IC)

Pin No.	Mark	IN/ OUT	Signal Name	Function
1		-	NU	Not Used
2		IN	PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage
3		IN	POW-SAF	Abnormal Voltage Detection
4		IN	END-S	Tape End Position Detect Signal
5		-	NU	Not Used
6		IN	V-ENV	Video Envelope Comparator Signal
7		IN	KEY-1	Key Scan Input Signal 1
8		IN	KEY-2	Key Scan Input Signal 2
9		IN	LD-SW	Deck Mode Position Detector Signal
10		IN	ST-S	Tape Start Position Detector Signal
11		-	NU	Not Used
12		-	NU	Not Used
13		OUT	D-V- SYNC	Dummy V-sync Output
14		IN	REMOCON -IN	Remote Control Sensor
15		OUT	C-ROTA	Color Phase Rotary Changeover SIgnal
16		OUT	H-A-SW	Video Head Amp Switching Pulse
17		IN	H-A-COMP	Head Amp Comparator Signal
18		OUT	RF-SW	Video Head Switching Pulse
19		OUT	Hi-Fi-H-SW	HiFi Audio Head Switching Pulse
20		-	NU	Not Used
21		-	NU	Not Used
22		-	NU	Not Used
23		-	NU	Not Used
24		-	NU	Not Used
25		-	NU	Not Used
26		OUT	REC-LED	Rec Mode LED Signal Output
27		-	NU	Not Used
28		-	NU	Not Used
29		-	NU	Not Used
30		-	NU	Not Used
31		IN	REC-SAF-SW	Recording Safety SW Detect (With Record tab="L"/ With out Record tab="H")
32		IN	A-MODE	Hi-Fi Tape Detection Signal
33		OUT	D-REC-H	Delayed Record Signal
34		IN	RESET	System Reset Signal (Reset="L")
35		IN	Xcin	Sub Clock
36		OUT	Xcout	Sub Clock
37		-	Vcc	Vcc
38		IN	Xin	Main Clock Input
39		OUT	Xout	Main Clock Input
40		-	GND	Vss(GND)
41		-	NU	Not Used
42		-	NU	Not Used
43		IN	CLKSEL	Clock Select (GND)
44		IN	OSCin	Clock Input for letter size
45		OUT	OSCout	Clock Output for letter size
46		-	NUB	Not Used
47		IN	LP	LP
48		IN	FSC-IN [4.43MHz]	4.43MHz Clock Input
49		-	OSDVss	OSDVss
50		IN	OSD-V-IN	OSD Video Signal Input
51		-	LECHA	Not Used
52		OUT	OSD-V-OUT	OSD Video Signal Output
53		-	OSDVcc	OSDVcc
54		-	HLF	LPF Connected Terminal (Slicer)
55	A,C	IN	COLOR-IN	SECAM or MESECAM Chroma Video Input Signal at Super Impose
	B	-	NU	Not Used
56		-	NU	Not Used
57		-	NU	Not Used
58		IN	C-CYNC	Composite Synchronized Pulse
59		-	NU	Not Used

Pin No.	Mark	IN/ OUT	Signal Name	Function
60		OUT	C-POW-SW	Capstan Power Switching Signal
61	A,B	-	NU	Not Used
	C	IN	SECAM-H	SECAM Mode at High
62	A,B	-	NU	Not Used
	C	OUT	TRICK-H	Special playback = "H" in SECAM Mode
63		-	NU	Not Used
64		IN	S-CS	Sub Micro Controller Interface Chip Select Signal Input
65		OUT	S-DATA-OUT	Communication of Data from VCR Micro Controller
66		IN	S-DATA-IN	Communication of Data to VCR Micro Controller
67		OUT	S-CLOCK	Communication of Clock with VCR Micro Controller
68		OUT	DRV-DATA	VFD Driver IC Control Data
69		OUT	DRV-STB	VFD Driver IC Chip Select Signal
70		OUT	DRV-CLK	VFD Driver IC Control Clock
71		OUT	IIC-BUS-SCL	IIC BUS Control Clock
72		IN/ OUT	IIC-BUS-SDA	IIC BUS Control Data
73		-	NU	Not Used
74		-	NU	Not Used
75		OUT	P-ON-H	Power On Signal to High
76		OUT	C-CONT	Capstan Motor Control Signal
77		OUT	D-CONT	Drum Motor Control Signal
78		OUT	C-F/R	Capstan Motor FWD/ REV Control Signal (FWD="L"/REV="H")
79		IN	S-REEL	Supply Reel Rotation Signal
80		IN	T-REEL	Take Up Reel Rotation Signal
81		OUT	LM-FWD/ REV	Loading Motor Control Signal
82		-	NU	Not Used
83		OUT	VCR-AUDIO-MUTE	Audio Mute Control Signal (Mute = "H")
84		-	NU	Not Used
85		-	NU	Not Used
86		-	NU	Not Used
87		IN	C-FG	Capstan Motor Rotation Detection Pulse
88		-	AMPVss	AMPVss
89		-	GND	GND
90		IN	D-PFG	Drum Motor Phase/ Frequency Generator
91		-	AMPVREF out	V-Ref for CTL AMP
92		-	AMPVREF in	V-Ref for CTL AMP
93		-	P80/C	P80/C Terminal
94		IN/ OUT	CTL (-)	Playback/Record Control Signal (-)
95		IN/ OUT	CTL (+)	Playback/Record Control Signal (+)
96		-	AMPC	CTL AMP Connected Terminal
97		-	CTL	To Monitor for CTL AMP Output
98		-	AMPVcc	AMPVcc
99		-	AVcc	A/D Converter Power Input/ Standard Voltage Input
100		-	NU	Not Used

Notes:

Abbreviation for Active Level:

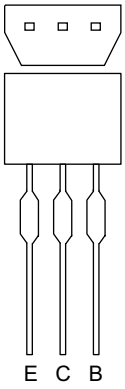
PWM -----Pulse Wide Modulation

A/D--------Analog - Digital Converter

IC612 (FRONT PANEL CONTROL)

Pin No.	IN/ OUT	Signal Name	Function
1	IN	CLK	Clock Input
2	IN	STB	Serial Interface Strobe
3	-	NU	Not Used
4	-	NU	Not Used
5	-	VSS	GND
6	-	VDD	Power Supply
7	OUT	a	Segment Output
8	OUT	b	
9	OUT	c	
10	OUT	d	
11	OUT	e	
12	IN	f	
13	IN	g	
14	OUT	h	
15	-	VEE	Pull Down Level
16	OUT	i	Segment Output
17	OUT	7G	Grid Output
18		6G	
19		5G	
20		4G	
21		3G	
22		2G	
23		1G	
24	-	VDD	Power Supply
25	-	VSS	GND
26	IN	OSC	Oscillator Input
27	-	NU	Not Used
28	IN	DIN	Serial Data Input

LEAD IDENTIFICATIONS



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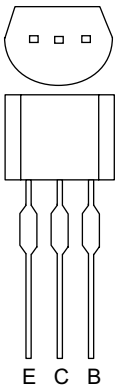
KRA104M-AT/P
KRC103M-AT/P
KTA-1266-GR-AT/P
KTA1267Y-AT/P
KTA1281Y-AT/P
KTC3193-Y-AT/P
KTC3199-(BL,Y)-AT/P



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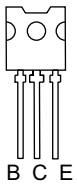
KTC3205-Y-AT/P
KTC3198-Y-AT/P
KTC3266-Y-AT/P

S2Y52



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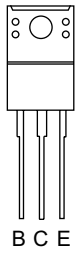

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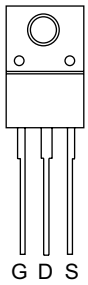

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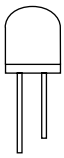
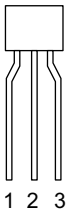
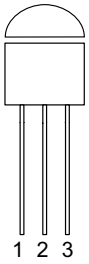


KRC106M-AT/P



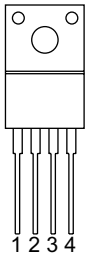
1: B
2: C
3: E

KIA431-AT/P



1: R
2: A
3: K

PQ070XF01SZH



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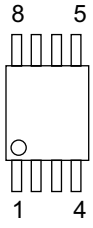

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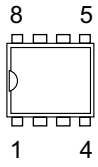
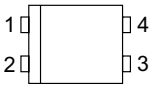
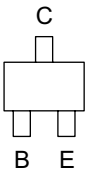


EL817A

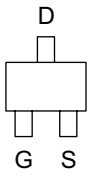


1: Anode
2: Cathode
3: Emitter
4: Collector

KRC103S-RTK/P
KTC3875S-(GR,Y)-RTK/P



SSM3K15F(TE85L F)



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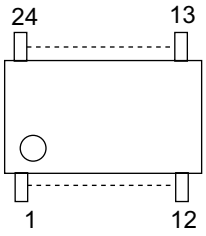

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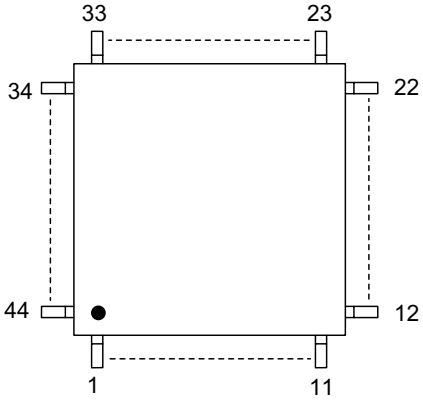

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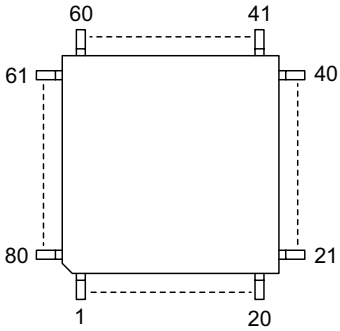

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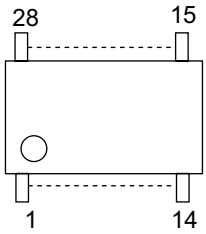

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PST3619NR
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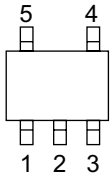
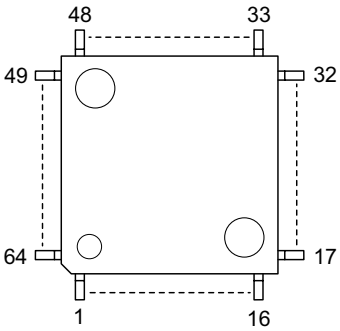
R3112N191A-TR-FB



MN101C77A FL1



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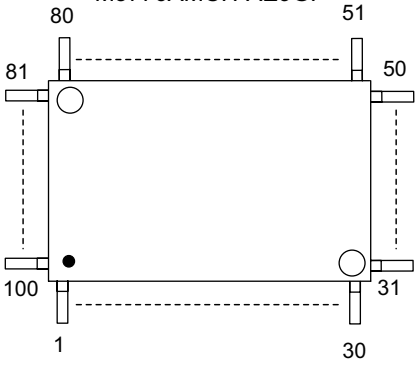
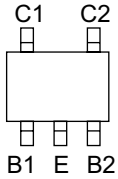
LA71750EM-MPB-E
M3776AMCH-AE9GP



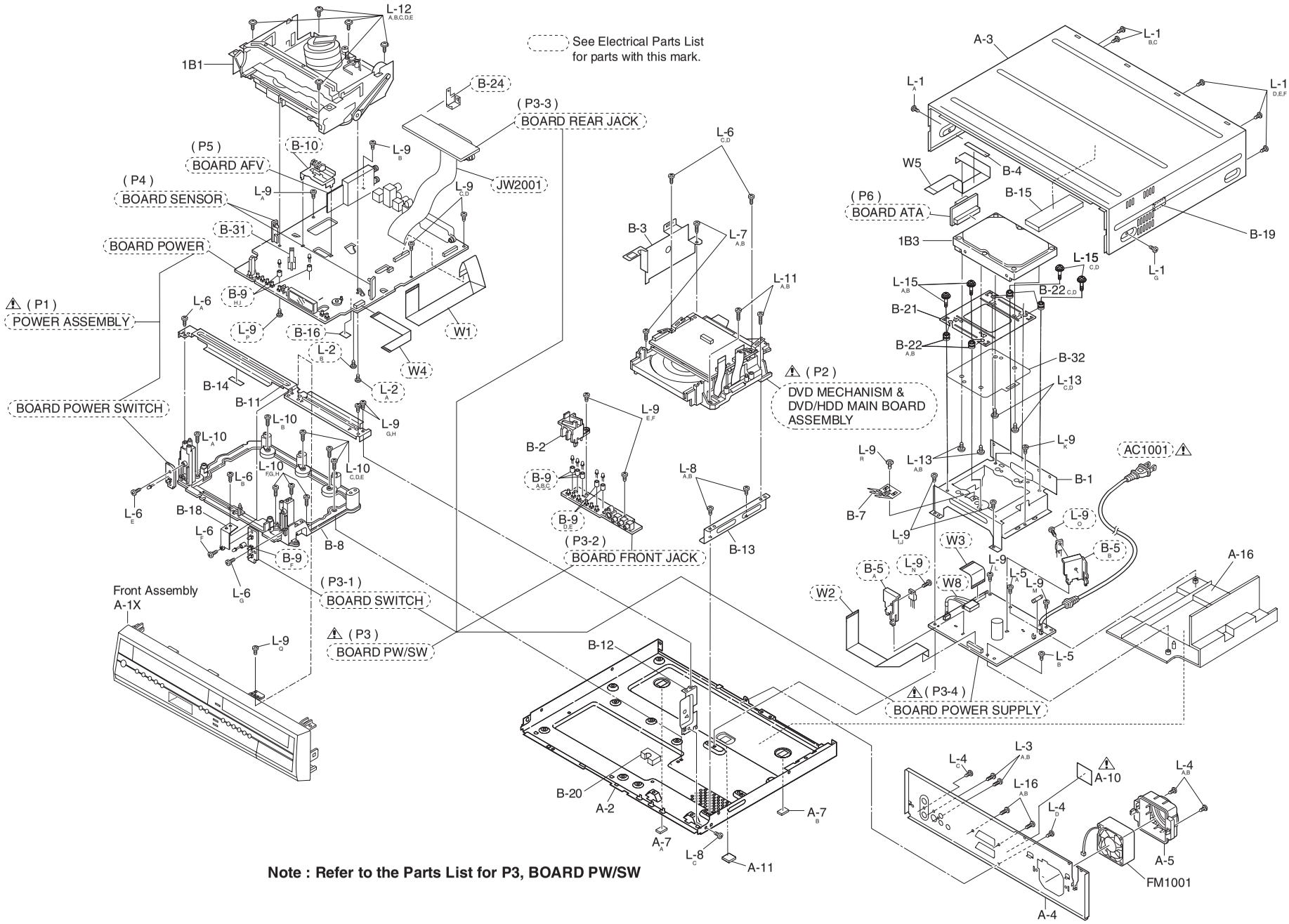
RN1511(TE85R.F)



Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

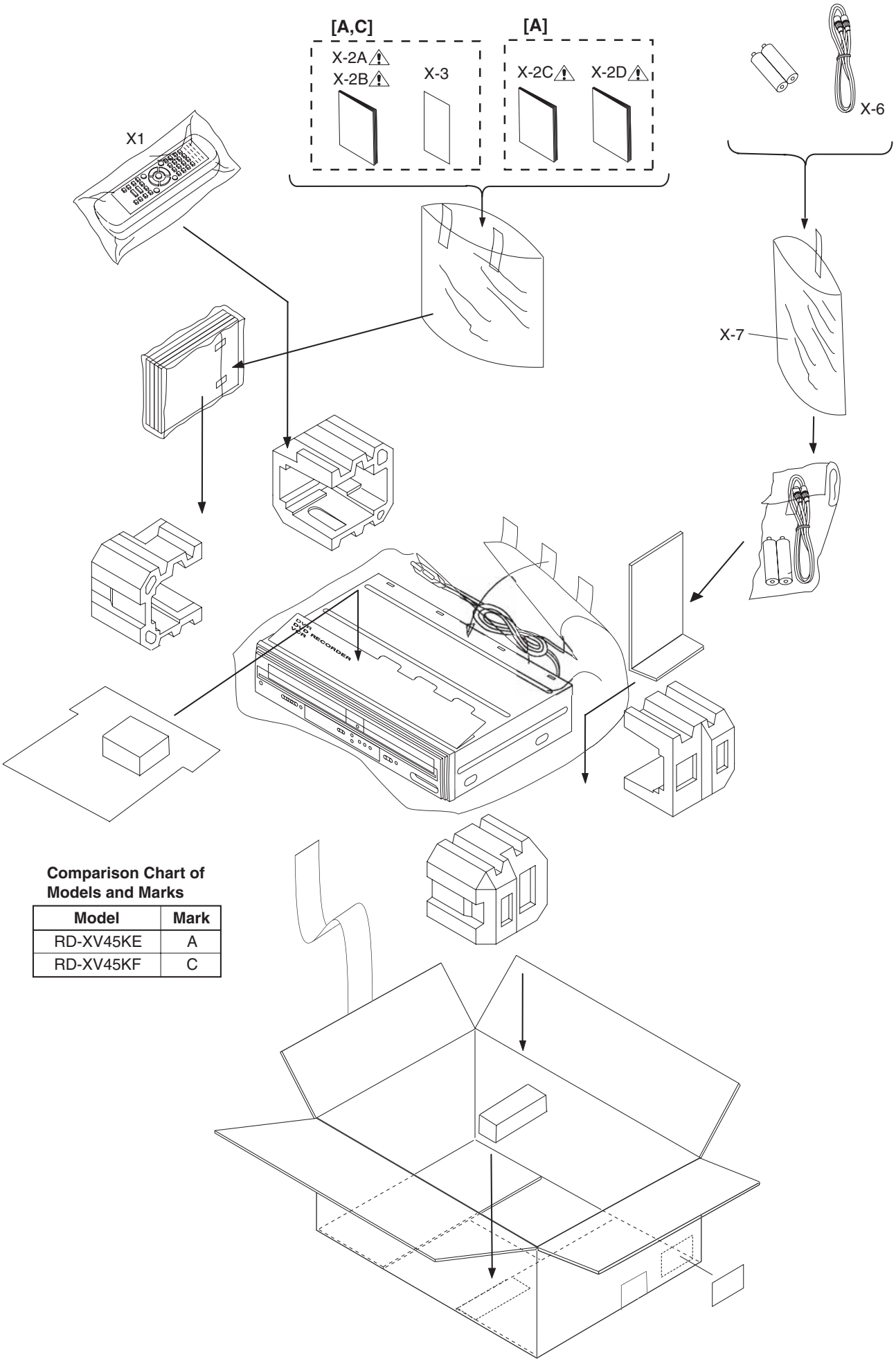
EXPLODED VIEWS

Cabinet



Note : Refer to the Parts List for P3, BOARD PW/SW

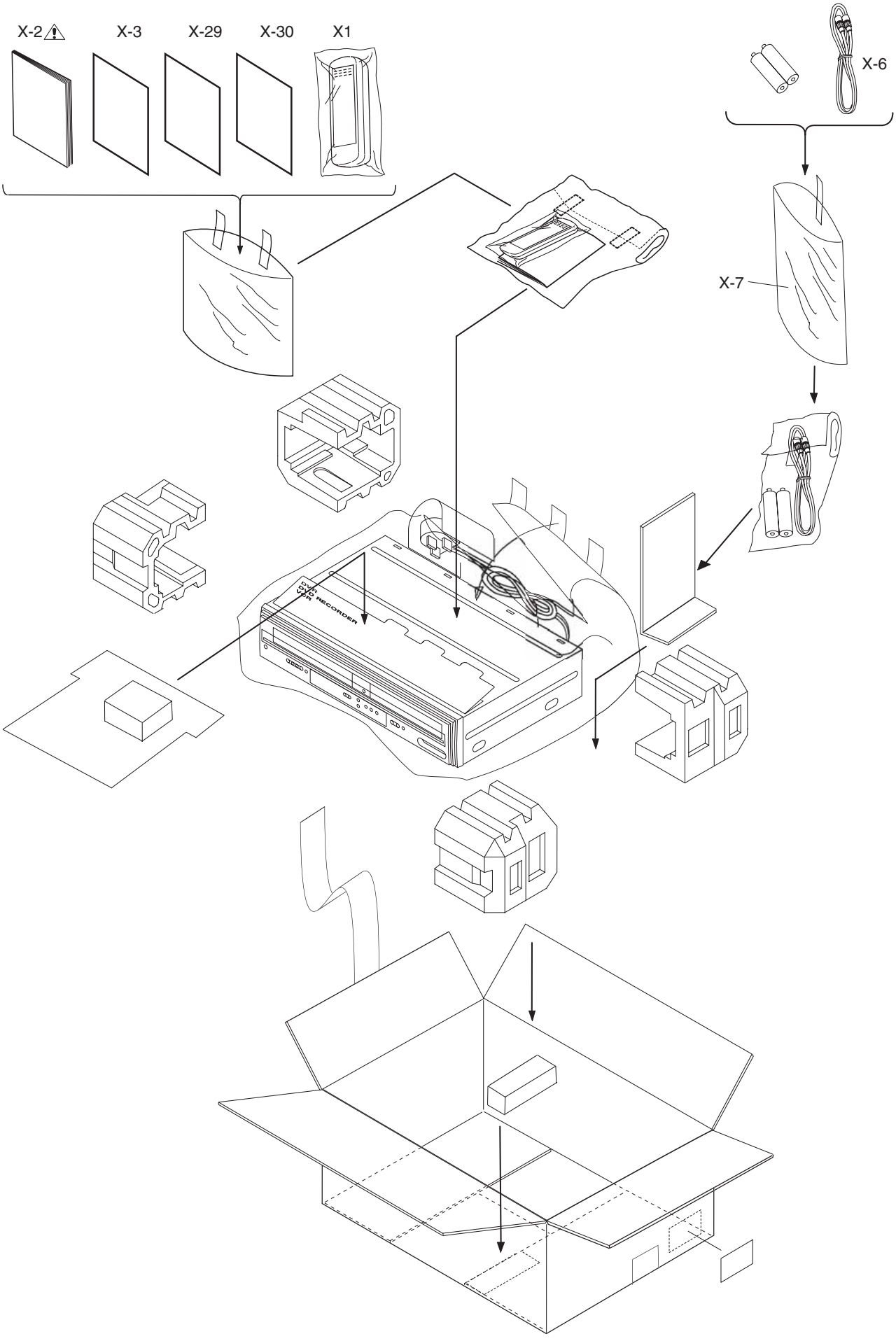
Packing [RD-XV45KE/RD-XV45KF]



Comparison Chart of Models and Marks

Model	Mark
RD-XV45KE	A
RD-XV45KF	C

Packing [RD-XV45KB]



MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

Comparison Chart of Models and Marks

Model	Mark
RD-XV45KE	A
RD-XV45KB	B
RD-XV45KF	C

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	A-1X	A,B	P000472660	1VM222628	PANEL FRONT E439AED
	A-1X	C	P000473010	1VM222634	PANEL FRONT E439CFD
	A-2			1VM120193G	MAIN CHASSIS E4340UD
	A-3		P000472670	1VM323139	COVER TOP(BLACK) E439AED
	A-5			1VM220745	FAN HOLDER E4340UD
	A-7A			0VM416122	FOOT E6500UD
	A-7B			0VM416122	FOOT E6500UD
	A-11			1VM422956	CENTER CUSHION E4350JD
	A-16			1VM322233	POWER HOLDER E434AED
	1B1		P000472770	N25E1FL	DECK ASSEMBLY CZD014/VM25E0
	1B3		P000472830	UHDD160WG001	HARD DISK DRIVE WD1600BB-55GUC0
	B-1			1VM220719D	HDD BRACKET E4340UD
	B-2			1VM422056	MODE LENS HOLDER E4340UD
	B-3			1VM321081	WIRE SHEET E4340UD
	B-4			1VM422058	TAPE HIMELON(HDD) E4340UD
	B-7			0VM414677A	PLATE EARTH E4321JD DV-HD300
	B-8			1VM120055D	DECK PEDESTAL E9600UD
	B-11			0VM204534C	FRONT BRACKET E9400UD
	B-12			0VM416269A	FRONT BRACKET R E9400UD
	B-13			1VM421062C	BRACKET R E9600UD
	B-14			0VM413956	TAPE HIMELON H9206JD
	B-15			1VM422515	RUBBER CUSHION(COVER TOP) E4340UD
	B-18			1VM422518	FRONT SUPPORT E4340UD
	B-19			1VM422517	SIDE CUSHION(COVER TOP) E4340UD
	B-20			1VM422534	RUBBER CUSHION (MAIN CHASSIS) E4340UD
	B-21			1VM423119	HDD SUPPORT (USA) E4340UD
	B-22A		P000472680	1VM422863	HDD RUBBER E4350JD
	B-22B			1VM422863	HDD RUBBER E4350JD
	B-22C			1VM422863	HDD RUBBER E4350JD
	B-22D			1VM422863	HDD RUBBER E4350JD
	B-32			1VM424477	INSULATION SHEET E434AED
	FM1001		P000472760	MMEZR12NM005	DC FAN MOTOR 2410RL-04W-S20-C01
	L-1A			GBHC3050	SCREW TAP TIGHT M3X5 BIND HEAD+BLK NI
	L-1B			GBHC3050	SCREW TAP TIGHT M3X5 BIND HEAD+BLK NI
	L-1C			GBHC3050	SCREW TAP TIGHT M3X5 BIND HEAD+BLK NI
	L-1D			GBHC3050	SCREW TAP TIGHT M3X5 BIND HEAD+BLK NI
	L-1E			GBHC3050	SCREW TAP TIGHT M3X5 BIND HEAD+BLK NI
	L-1F			GBHC3050	SCREW TAP TIGHT M3X5 BIND HEAD+BLK NI
	L-1G			GBHC3050	SCREW TAP TIGHT M3X5 BIND HEAD+BLK NI
	L-3A			GBHB3080	SCREW B-TIGHT M3X8 BIND HEAD+
	L-3B			GBHB3080	SCREW B-TIGHT M3X8 BIND HEAD+
	L-4A			GBHS3050	SCREW S-TIGHT M3*5 BIND+ 3*5 BIND+
	L-4B			GBHS3050	SCREW S-TIGHT M3*5 BIND+ 3*5 BIND+
	L-4C			GBHS3050	SCREW S-TIGHT M3*5 BIND+ 3*5 BIND+
	L-4D			GBHS3050	SCREW S-TIGHT M3*5 BIND+ 3*5 BIND+
	L-5A			GBJP3060	SCREW P-TIGHT M3X6 BIND HEAD+
	L-5B			GBJP3060	SCREW P-TIGHT M3X6 BIND HEAD+
	L-6A			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	L-6B			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	L-6C			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	L-6D			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	L-6E			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	L-6F			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	L-6G			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	L-7A			GBJP3120	SCREW P-TIGHT M3*12 BIND+
	L-7B			GBJP3120	SCREW P-TIGHT M3*12 BIND+
	L-8A			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-8B			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-8C			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9A			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9B			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9C			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9D			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9E			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9F			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9G			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9H			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9I			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9J			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9K			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9L			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9M			0VM412937A	SCREW C-TIGHT M3X6 E5610UD

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	L-9Q			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	L-9R			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	L-10A			0VM413320A	SCREW S-TIGHT 3X8 H9210UD
	L-10B			0VM413320A	SCREW S-TIGHT 3X8 H9210UD
	L-10C			0VM413320A	SCREW S-TIGHT 3X8 H9210UD
	L-10D			0VM413320A	SCREW S-TIGHT 3X8 H9210UD
	L-10E			0VM413320A	SCREW S-TIGHT 3X8 H9210UD
	L-10F			0VM413320A	SCREW S-TIGHT 3X8 H9210UD
	L-10G			0VM413320A	SCREW S-TIGHT 3X8 H9210UD
	L-10H			0VM413320A	SCREW S-TIGHT 3X8 H9210UD
	L-11A			GBJS3100	SCREW S-TIGHT M3X10 BIND HEAD+
	L-11B			GBJS3100	SCREW S-TIGHT M3X10 BIND HEAD+
	L-12A			GCJP3100	SCREW P-TIGHT M3*10 WASHERHEAD+
	L-12B			GCJP3100	SCREW P-TIGHT M3*10 WASHERHEAD+
	L-12C			GCJP3100	SCREW P-TIGHT M3*10 WASHERHEAD+
	L-12D			GCJP3100	SCREW P-TIGHT M3*10 WASHERHEAD+
	L-12E			GCJP3100	SCREW P-TIGHT M3*10 WASHERHEAD+
	L-13A			SAC3T050	INCH SCREW 3.4X5 +
	L-13B			SAC3T050	INCH SCREW 3.4X5 +
	L-13C			SAC3T050	INCH SCREW 3.4X5 +
	L-13D			SAC3T050	INCH SCREW 3.4X5 +
	L-15A			1VM422864	HDD SCREW E4350JD
	L-15B			1VM422864	HDD SCREW E4350JD
	L-15C			1VM422864	HDD SCREW E4350JD
	L-15D			1VM422864	HDD SCREW E4350JD
	L-16A			GBHP3080	SCREW P-TIGHT M3X8 BIND HEAD+ BLK
	L-16B			GBHP3080	SCREW P-TIGHT M3X8 BIND HEAD+ BLK
	W5		P000472910	WX1E4370-101	FFC ATA-MAIN 40P(THIN PLATING) 40PIN/ TL265MM
ACCESSORIES					
	X-1	A,C	P000473000	NB316ED	REMOTE CONTROL UNIT NB316ED
	X-1	B	P000472790	NB315BD	REMOTE CONTROL UNIT NB315BD
⚠	X-2	B	P000472690	1VMN23138	OWNERS MANUAL(EN) E439BBD
⚠	X-2A	A	P000472920	1VMN23125	OWNERS MANUAL(EN) E439AED
⚠	X-2A	C	P000473020	1VMN23140	OWNERS MANUAL(FR) E439CFD
⚠	X-2B	A	P000472930	1VMN23126	OWNERS MANUAL(DE) E439AED
⚠	X-2B	C	P000473030	1VMN23141	OWNERS MANUAL(ES) E439CFD
⚠	X-2C	A	P000472940	1VMN23127	OWNERS MANUAL(NL) E439AED
⚠	X-2D	A	P000472950	1VMN23128	OWNERS MANUAL(TU) E439AED
	X-3	A	P000472960	1VMN23129	QUICK GUIDE E439AED
	X-3	B	P000472700	1VMN23139	QUICK GUIDE E439BBD
	X-3	C	P000473040	1VMN23142	QUICK GUIDE E439CFD
	X-6		P000460030	WPZ0122LG001	RF CORD PAL 1.2M
	X-7			0VM411198	BAG REMOCON N9430UD(90*250)
	X-29	B		1VM424769	HELP LINE SHEET E9BA1BD
	X-30	B		1VMN22863	REGISTE RATION CARD E7B71BD

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25% D.....±0.5% F.....±1%

G.....±2% J.....±5% K.....±10%

M.....±20% N.....±30% Z.....+80/-20%

Comparison Chart of Models and Marks

Model	Mark
RD-XV45KE	A
RD-XV45KB	B
RD-XV45KF	C

DVD MECHANISM & DVD MAIN BOARD ASSEMBLY

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
⚠	P2	A	P000472990	N7REWBEN	DVD MECHANISM & DVD MAIN BOARD ASSEMBLY
⚠	P2	B	P000472780	N7REXBBN	DVD MECHANISM & DVD MAIN BOARD ASSEMBLY
⚠	P2	C	P000473070	N7REYBFN	DVD MECHANISM & DVD MAIN BOARD ASSEMBLY

POWER ASSEMBLY

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
⚠ ⚠ ⚠	P1 P1 P1	A B C	P000472980 P000472750 P000473060	1VSA14959 1VSA14938 1VSA14934	POWER ASSEMBLY POWER ASSEMBLY POWER ASSEMBLY Consists of the following:
				---------	BOARD POWER (AV PCB A)
				---------	BOARD POWER SWITCH (AV PCB B)
	P4			1VSA13519	BOARD SENSOR

BOARD POWER

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
				---------	BOARD POWER (AV PCB A) Consists of the following:
			CAPACITORS		
	C251			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C252			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C253			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C254			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C301			CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/ 50V
	C302			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C303			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C305			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C306			CHD1JK30B473	CHIP CERAMIC CAP.(1608) B K 0.047µF/ 50V
	C307			CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/ 50V
	C308			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C311			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C312			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C313			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C314			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C315			CHD1JK30B473	CHIP CERAMIC CAP.(1608) B K 0.047µF/ 50V
	C316			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C317			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C318	A		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/ 50V
	C324			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C325			CHD1JK30B822	CHIP CERAMIC CAP. B K 8200pF/50V
	C326			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C328			CE0KMAVSL470	ELECTROLYTIC CAP. 47µF/6.3V M H7
	C329			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C331			CE0KMAVSL221	ELECTROLYTIC CAP. 220µF/6.3V M H7
	C332			CE1CMAVSL101	ELECTROLYTIC CAP. 100µF/16V M H7
	C333			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C334			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C335			CE0KMAVSL101	ELECTROLYTIC CAP. 100µF/6.3V H7
	C336			CHD1JJ3CH221	CHIP CERAMIC CAP. CH J 220pF/50V
	C337			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C339			CHD1JJ3CH121	CHIP CERAMIC CAP. CH J 120pF/50V
	C340			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C341			CHD1JD3CH100	CHIP CERAMIC CAP.(1608) CH D 10pF/ 50V
	C342			CHD1JJ3CH102	CHIP CERAMIC CAP.(1608) CH J 1000pF/ 50V
	C343			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C344			CP1EMAVSB4R7	ELECTROLYTIC CAP. 4.7µF/25V M NP H7
	C345			CE1JMAVSLR47	ELECTROLYTIC CAP. 0.47µF/50V M H7
	C346			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C347			CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C349			CE1JMAVSLR47	ELECTROLYTIC CAP. 0.47µF/50V M H7
	C350			CCA1JZTFZ104	CERAMIC CAP.(AX) F Z 0.1µF/50V
	C370	C		CCA1CMT0Y103	CERAMIC CAP.(AX) Y M 0.01µF/16V
	C371	C		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/ 50V
	C372	C		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C373	C		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C374	C		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C375	C		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C376	C		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/ 50V
	C377	C		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C378	C		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C379	C		CE1JMAVSLR47	ELECTROLYTIC CAP. 0.47µF/50V M H7
	C381	C		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C382	C		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C383	C		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C384	C		CE1JMAVSL2R2	ELECTROLYTIC CAP. 2.2µF/50V M H7
	C402			CMA1JJP00183	FILM CAP.(P) 0.018µF/50V J
	C403			CCD2AKS0B471	CERAMIC CAP. B K 470pF/100V
	C404			CE0KMAVSL221	ELECTROLYTIC CAP. 220µF/6.3V M H7
	C405			CE0KMAVSL470	ELECTROLYTIC CAP. 47µF/6.3V M H7
	C407			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C408			CHD1JK30B182	CHIP CERAMIC CAP. B K 1800pF/50V
	C409			CHD1JJ3CH330	CHIP CERAMIC CAP.(1608) CH J 33pF/50V
	C410			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C411			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C412			CE0KMAVSL330	ELECTROLYTIC CAP. 33µF/6.3V M H7
	C413			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C414			CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/ 50V
	C415			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7µF/25V M H7
	C416			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C417			CE0KMAVSL220	ELECTROLYTIC CAP. 22µF/6.3V M H7
	C418			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C419			CHD1JJ3CH221	CHIP CERAMIC CAP. CH J 220pF/50V
	C421			CE0KMAVSL470	ELECTROLYTIC CAP. 47µF/6.3V M H7
	C452			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C453			CE1AMAVSL220	ELECTROLYTIC CAP. 22µF/10V M H7
	C454			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C455			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C456			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C457			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7µF/25V M H7
	C458			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C461			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C462			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C463			CE1AMAVSL220	ELECTROLYTIC CAP. 22µF/10V M H7
	C464			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C465			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C466			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C467			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C468			CE0KMAVSL221	ELECTROLYTIC CAP. 220µF/6.3V M H7
	C469			CE1AMAVSL220	ELECTROLYTIC CAP. 22µF/10V M H7
	C470			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C471			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C472			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7µF/25V M H7
	C473			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C474			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C475			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C476			CE0KMAVSL220	ELECTROLYTIC CAP. 22µF/6.3V M H7
	C478			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C479			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C480			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C481			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C482			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C483			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7µF/25V M H7
	C484			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7µF/25V M H7
	C485			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C486			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C487			CE1CMAVSL470	ELECTROLYTIC CAP. 47µF/16V M H7
	C488			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C502			CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/ 50V
	C505			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C506			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C507			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C508			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C509			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C510			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C511			CHD1JJ3CH101	CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V
	C512			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C514			CHD1JK30B331	CHIP CERAMIC CAP. B K 330pF/50V
	C515			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C516			CE0KMAVSL220	ELECTROLYTIC CAP. 22µF/6.3V M H7
	C517			CCA1EZTFZ223	CERAMIC CAP.(AX) F Z 0.022µF/25V
	C518			CE0KMAVSL220	ELECTROLYTIC CAP. 22µF/6.3V M H7
	C519			CHD1JJ3CH561	CHIP CERAMIC CAP. CH J 560pF/50V
	C521			CE0KMAVSL220	ELECTROLYTIC CAP. 22µF/6.3V M H7
	C522			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C524			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C527			CCA1JKT0B101	CERAMIC CAP.(AX) B K 100pF/50V
	C531			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C533			CHD1JK30B473	CHIP CERAMIC CAP.(1608) B K 0.047µF/ 50V
	C534			CE0KMAVSL470	ELECTROLYTIC CAP. 47µF/6.3V M H7
	C535			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C536	A,C		CHD1JJ3CH561	CHIP CERAMIC CAP. CH J 560pF/50V
	C538			CHD1JJ3CH181	CHIP CERAMIC CAP. CH J 180pF/50V
	C539			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C540			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C541			CHD1JJ3CH180	CHIP CERAMIC CAP. CH J 18pF/50V
	C542			CHD1JJ3CH180	CHIP CERAMIC CAP. CH J 18pF/50V
	C545			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C546			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C547			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C548			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C549			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C550			CE0KMAVSL101	ELECTROLYTIC CAP. 100µF/6.3V H7
	C553			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C554			CE0KMAVSL101	ELECTROLYTIC CAP. 100µF/6.3V H7
	C555			CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V
	C558			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C560			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C611			CE1JMASSL220	ELECTROLYTIC CAP. 22µF/50V M H7
	C612			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C614			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C616			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1501			JW5.0T	BOARD JUMPER D0.6-P5.0
	C1502			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M
	C1506			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1507			CE1EMASDL221	ELECTROLYTIC CAP. 220µF/25V M
	C1508			CHD1JK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V
	C1509			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M
	C1510			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1511			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1512			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1514			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1515			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1517			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1519			CE1CMASDL221	ELECTROLYTIC CAP. 220µF/16V M
	C1520			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1521			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1522			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1525			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1526			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1527			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1528			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1530			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1532			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C1533			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C1536			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1537			CE0KMASDL470	ELECTROLYTIC CAP. 47µF/6.3V M
	C1539			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1540			CE1CMASDL471	ELECTROLYTIC CAP. 470µF/16V M
	C1541			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1542			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1543			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1544			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1546			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1547			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1548			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
If C1549A is 0.015µF, then IC1502A is R3112N191A-TR- FA.					
	C1549A			CHD1JK30B153	CHIP CERAMIC CAP.(1608) B K 0.015µF/ 50V
	IC1502A		P000459990	QSZBA0TRC021	VOLTAGE DETECT R3112N191A-TR-FA

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
If C1549B is 0.1µF, then IC1502B is PST3619NR.					
	C1549B			CHD1JK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V
	IC1502B		P000459980	QSZBA0TMM151	SYSTEM RESET IC PST3619NR
	C1550			CE1EMASDL470	ELECTROLYTIC CAP. 47µF/25V M
	C1551			CE0KMASDL470	ELECTROLYTIC CAP. 47µF/6.3V M
	C1552			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C1553			CHD1JJ3CH101	CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V
	C1554			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1555			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M
	C1557			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1558			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1559			CHD1JJ3CH271	CHIP CERAMIC CAP.(1608) CH J 270pF/ 50V
	C1560			CHD1JJ3CH470	CHIP CERAMIC CAP.(1608) CH J 47pF/50V
	C1561			CHD1JJ3CH271	CHIP CERAMIC CAP.(1608) CH J 270pF/ 50V
	C1562			CHD1JJ3CH470	CHIP CERAMIC CAP.(1608) CH J 47pF/50V
	C1563			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1564			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1565			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1566			CE1JMASDLR47	ELECTROLYTIC CAP. 0.47µF/50V M
	C1567			CE1JMASDLR47	ELECTROLYTIC CAP. 0.47µF/50V M
	C1568			CE1JMASDLR47	ELECTROLYTIC CAP. 0.47µF/50V M
	C1569			CE1JMASDLR47	ELECTROLYTIC CAP. 0.47µF/50V M
	C1570			CE1JMASDLR47	ELECTROLYTIC CAP. 0.47µF/50V M
	C1571			CE1JMASDLR47	ELECTROLYTIC CAP. 0.47µF/50V M
	C1572			CE1JMASDLR47	ELECTROLYTIC CAP. 0.47µF/50V M
	C1573			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1574			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7µF/25V M
	C1575			CE1JMASDLR47	ELECTROLYTIC CAP. 0.47µF/50V M
	C1576			CE1JMASDLR47	ELECTROLYTIC CAP. 0.47µF/50V M
	C1577			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1578			CE1JMASDLR47	ELECTROLYTIC CAP. 0.47µF/50V M
	C1579			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1581			CE1AMASDL470	ELECTROLYTIC CAP. 47µF/10V M
	C1582			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1583			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7µF/25V M
	C1584			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7µF/25V M
	C1585			CHD1JJ3CH680	CHIP CERAMIC CAP.(1608) CH J 68pF/50V
	C1586			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7µF/25V M
	C1587			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C1588			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1589			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7µF/25V M
	C1590			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7µF/25V M
	C1591			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7µF/25V M
	C1592			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7µF/25V M
	C1593			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7µF/25V M
	C1594			CE0KMASDL470	ELECTROLYTIC CAP. 47µF/6.3V M
	C1595			JW5.0T	BOARD JUMPER D0.6-P5.0
	C1596			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1597			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1598			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1599			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1600			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1601			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1602			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1603			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1604			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1605			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1606			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1607			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1608			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1609			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1610			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1611			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1612			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1613			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1614			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1615			CE0KMASDL470	ELECTROLYTIC CAP. 47µF/6.3V M
	C1616			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1617			CE0KMASDL470	ELECTROLYTIC CAP. 47µF/6.3V M
	C1618			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1619			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1620			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1621			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1622			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1623			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1625			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1628			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1629			CE0KMASDL470	ELECTROLYTIC CAP. 47µF/6.3V M
	C1630			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C1631			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1632			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1633			CCA1JZTFZ104	CERAMIC CAP.(AX) F Z 0.1µF/50V
	C1634			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7µF/25V M H7
	C1635			CDA1EKP0X183	SEMICONDUCTOR CAP. SR K 0.018µF/25V
	C1636			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/50V M H7
	C1637			CP1JMAVSB1R0	ELECTROLYTIC CAP. 1µF/50V M H7 NP
	C1638			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C1639			CE0KMAVSL470	ELECTROLYTIC CAP. 47µF/6.3V M H7
	C1641			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C1644			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1645			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1646			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1647			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1648			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1649			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C1650			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1652			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C1654			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1656			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1659			CE0KMASDL470	ELECTROLYTIC CAP. 47µF/6.3V M
	C1664			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1665			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1666			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C1667			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1668			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C1669			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1673			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1679			CHD1JZ30F103	CHIP CERAMIC CAP. F Z 0.01µF/50V
	C1680			CE1JMASDL100	ELECTROLYTIC CAP. 10µF/50V M
	C1681			CE1JMASDLR33	ELECTROLYTIC CAP. 0.33µF/50V M
	C1690			JW5.0T	BOARD JUMPER D0.6-P5.0
	C1691			CE1CMASDL101	ELECTROLYTIC CAP. 100µF/16V M
	C1692			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1693			CHD1JJ3CH680	CHIP CERAMIC CAP.(1608) CH J 68pF/50V
	C1694			CHD1JJ3CH680	CHIP CERAMIC CAP.(1608) CH J 68pF/50V
	CONNECTORS				
	CN1501			JCFNG30JG020	FMN CONNECTOR TOP 30P 30FMN-BTRK-A(LF)(SN)
	CN1503			JCFNG20JG022	FMN CONNECTOR SIDE 20P 20FMN-STRK-A(LF)(SN)
	CN1504			JCFNG30JG020	FMN CONNECTOR TOP 30P 30FMN-BTRK-A(LF)(SN)
	CN1508	A,B		E9771AFV	AFV BOARD ASSEMBLY E9771AFV
	CN1508	C		E9772AFV	AFV BOARD ASSEMBLY E9772AFV
	DIODES				
	D301			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D370	C		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D510			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D520			NPQZ0012541T	LED(RED) 1254IT
	D555		P000468290	NPZZM1E534A2	LED MIE-534A2
	D1501		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1502			JW7.5T	BOARD JUMPER D0.6-P7.5
	D1503		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1504		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1505			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1507		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1508		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1509		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1510		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1511			QDTC0MTZJ5R6	ZENER DIODE MTZJT-775.6C
	D1512		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1513		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1514			QDTB00MTZJ10	ZENER DIODE MTZJT-7710B
	D1516			QDTB00MTZJ18	ZENER DIODE MTZJT-7718B
	D1517			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1518			QDTB00MTZJ10	ZENER DIODE MTZJT-7710B
	D1519			QDTB0MTZJ5R6	ZENER DIODE MTZJT-775.6B
	D1522			QDTC0MTZJ5R6	ZENER DIODE MTZJT-775.6C
	D1523			QDTA0MTZJ7R5	ZENER DIODE MTZJT-777.5A
	D1524			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1525			QDTB0MTZJ3R0	ZENER DIODE MTZJT-773.0B
	D1526			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1527			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1528			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1529			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1530			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1531			QDTB00MTZJ33	ZENER DIODE MTZJT-7733B
	D1532			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1533			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1534			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1535			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	D1536			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1539			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1540			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1541			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1542		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1543		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1544		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1545		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1546			NDQZ000SB140	SCHOTTKY BARRIER DIODE SB140
	D1550			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1551			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1552			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1553			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1554			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1555			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1556			NDQZ000SB140	SCHOTTKY BARRIER DIODE SB140
	D1557			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1606			QDTA0MTZJ8R2	ZENER DIODE MTZJT-778.2A
			ICS		
	IC301		P000465590	QSZBA0RSY020	IC Y/C/A LA71750EM-MPB-E
	IC370	C	P000465860	QSZBA0TSY019	IC SECAM LA70100M-TRM-E
	IC451		P000465600	QSZBA0RSY033	IC HIFI LA72648M-MPB-E
	IC501			QSZAC0RHT101	SYSCON IC M3776AMCH-AE9GP
	IC612		P000457190	NSZBA0TG2007	VFD DRIVER/ CONTROLLER IC PT6313-S-TP(L)
	IC1501		P000468640	NSZBA0S2H003	IC OP AMP UTC4580 DIP-8 8PIN
If IC1502A is R3112N191A-TR-FA, then C1549A is 0.015µF.					
	IC1502A		P000459990	QSZBA0TRC021	VOLTAGE DETECT R3112N191A-TR-FA
	C1549A			CHD1JK30B153	CHIP CERAMIC CAP.(1608) B K 0.015µF/ 50V
If IC1502B is PST3619NR, then C1549B is 0.1µF.					
	IC1502B		P000459980	QSZBA0TMM151	SYSTEM RESET IC PST3619NR
	C1549B			CHD1JK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V
	IC1503		P000459940	NSZBA0TJY036	IC SHUNT REGULATOR KIA431-AT/P
	IC1504			QSZAB0RMS052	MICROCONTROLLER 8BIT MN101C77A FL1
	IC1505		P000459910	NSZBA0SJY035	IC OP AMP KIA4558P/P
	IC1506		P000459970	QSZBA0RHT051	IC INTERFACE HA118326APF-E
	IC1507		P000460000	QSZBA0TSY018	IC VPS/PDC SLICER LC74793JM-TLM-E
			COILS		
	L251			LLAXKATTU5R6	INDUCTOR 5.6µH-K-26T
	L302			LLAXKATTU101	INDUCTOR(100µH K) LAP02TA101K
	L370	C		JW5.0T	BOARD JUMPER D0.6-P5.0
	L402			LLARKBSTU470	INDUCTOR 47µH-K-5FT
	L451			LLARKBSTU470	INDUCTOR 47µH-K-5FT
	L452			JW5.0T	BOARD JUMPER D0.6-P5.0

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	L501			LLAXKATTU101	INDUCTOR(100µH K) LAP02TA101K
	L502			JW5.0T	BOARD JUMPER D0.6-P5.0
	L503			LLAXKATTU1R8	INDUCTOR 1.8µH-K-26T
	L1501			JW5.0T	BOARD JUMPER D0.6-P5.0
	L1503			LLBD00PKV022	CHOKE COIL 47µH
	L1504			LLBD00PKV022	CHOKE COIL 47µH
	L1505			LLARKBSTU101	INDUCTOR 100µH-K-5FT
	L1506			LLAXKATTU101	INDUCTOR(100µH K) LAP02TA101K
	L1507			LLAXKATTU101	INDUCTOR(100µH K) LAP02TA101K
	L1508			LLBD00PKV022	CHOKE COIL 47µH
	L1509			LLAXKATTU101	INDUCTOR(100µH K) LAP02TA101K
	L1510			LLAXKATTU101	INDUCTOR(100µH K) LAP02TA101K
	L1511			JW5.0T	BOARD JUMPER D0.6-P5.0
	L1513			LLAXKATTU101	INDUCTOR(100µH K) LAP02TA101K
	L1514			JW5.0T	BOARD JUMPER D0.6-P5.0
	L1516			LLAXKATTUR47	INDUCTOR(0.47µH K) LAP02TAR47K
	L1601			---------	BEAD CORE ASSEMBLY E9770ED
	L1601-1			JW20.0T	BOARD JUMPER D0.6-P20.0
	L1601-2			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
			TRANSISTORS		
	Q302			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q401			QQ2Z0RN1511F	CHIP TRANSISTOR RN1511(TE85R.F)
	Q402			NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q403			NQSYKTC3203P	TRANSISTOR KTC3203-Y-AT/P
	Q404			NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q405			NQSZ0KRA103M	RES. BUILT-IN TRANSISTOR KRA103M-AT/P
	Q406			NQ1YKTC3875S	CHIP TRANSISTOR KTC3875S-Y-RTK/P
	Q451			NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q506			NPWZT2046B12	PHOTO TRANSISTOR PT204-6B-12
	Q514			NQSYKTA1267P	TRANSISTOR KTA1267-Y-AT/P
	Q515			NQSZKRC106MP	NPN TRANSISTOR KRC106M-AT/P
	Q516			NQ14KTC3875S	CHIP TRANSISTOR KTC3875S-GR-RTK/P
	Q517			NQ14KTC3875S	CHIP TRANSISTOR KTC3875S-GR-RTK/P
	Q518			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q520			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1501			NQVYKTA1281P	TRANSISTOR KTA1281Y-AT/P
	Q1502			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1504			NQSYKTC3205P	TRANSISTOR KTC3205-Y-AT/P
	Q1509			NQSZ0KRA104M	RES. BUILT-IN TRANSISTOR KRA104M-AT/P
	Q1510			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1511			NQSYKTC3198P	TRANSISTOR KTC3198-Y-AT/P
	Q1512			NQSYKTC3193P	TRANSISTOR KTC3193-Y-AT/P

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	Q1514			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1515			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1516			NQSYKTC3203P	TRANSISTOR KTC3203-Y-AT/P
	Q1517			NQSYKTC3203P	TRANSISTOR KTC3203-Y-AT/P
	Q1518			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1519			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1520			NQSYKTC3203P	TRANSISTOR KTC3203-Y-AT/P
	Q1524			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1525			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1526			NQS5KTC3199P	TRANSISTOR KTC3199-BL-AT/P
	Q1527			NQSYKTA1267P	TRANSISTOR KTA1267-Y-AT/P
	Q1528			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1529			QF1GSSM3K15F	MOS FET SSM3K15F(TE85L F)
	Q1530			QF1GSSM3K15F	MOS FET SSM3K15F(TE85L F)
	Q1531			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1532			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1533			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1534			NQSYKTA1267P	TRANSISTOR KTA1267-Y-AT/P
	Q1535			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1536			NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q1537			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1538			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1539			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1540			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1601			NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q1602			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1603			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1604			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1605			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1606			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	RESISTORS				
	R251			RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R252			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R301			RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R303			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R305			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R308	A		RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R312	A		RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R314			RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R316			RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R319			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R320			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R321			RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R322			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R323			RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R325			RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R326			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R327			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R328			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R329			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R330			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R331			RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R332			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R333			RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R334			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R335			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R336			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R337			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R338			RRXAJR5Z0681	CHIP RES. 1/10W J 680 Ω
	R370	C		RRXAJR5Z0272	CHIP RES. 1/10W J 2.7k Ω
	R371	C		RCX6JATZ0562	CARBON RES. 1/6W J 5.6k Ω
	R372	C		RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R401			RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R402			RCX6JATZ0101	CARBON RES. 1/6W J 100 Ω
	R404			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R405			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R406			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R407			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R408			RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R409			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R410			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R411			RRXAJR5Z0273	CHIP RES. 1/10W J 27k Ω
	R412			RRXAJR5Z0121	CHIP RES. 1/10W J 120 Ω
	R413			RRXAJR5Z0334	CHIP RES. 1/10W J 330k Ω
	R414			RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R415			RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R416			RRXAJR5Z0561	CHIP RES. 1/10W J 560 Ω
	R417			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R418			RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R419			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R420			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R421			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R451			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R452			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R462			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R463			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R464			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R465			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R466			RRXAJR5Z0822	CHIP RES. 1/10W J 8.2k Ω
	R469			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R470			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R479			RRXAJR5Z0330	CHIP RES. 1/10W J 33 Ω
	R480			RCX6JATZ0101	CARBON RES. 1/6W J 100 Ω
	R481			RRXAJR5Z0330	CHIP RES. 1/10W J 33 Ω
	R482			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R483			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R484			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R509			RRXAJR5Z0181	CHIP RES. 1/10W J 180 Ω
	R511			RCX6GATZ0362	CARBON RES. 1/6W G 3.6k Ω
	R512			RRXAJR5Z0683	CHIP RES. 1/10W J 68k Ω
	R513			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R514			RCX6GATZ0103	CARBON RES. 1/6W G 10k Ω
	R516			RCX6GATZ0471	CARBON RES. 1/6W G 470 Ω
	R517			RCX4JATZ0271	CARBON RES. 1/4W J 270 Ω
	R519			RCX6GATZ0223	CARBON RES. 1/6W G 22k Ω
	R523			RCX6GATZ0152	CARBON RES. 1/6W G 1.5k Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R525			RRXAJR5Z0394	CHIP RES. 1/10W J 390k Ω
	R526			RCX6JATZ0394	CARBON RES. 1/6W J 390k Ω
	R528			RCX6GATZ0472	CARBON RES. 1/6W G 4.7k Ω
	R536			RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R537			RRXAJR5Z0681	CHIP RES. 1/10W J 680 Ω
	R539			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R540			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R541			RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R542			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R543			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R544			RCX6JATZ0103	CARBON RES. 1/6W J 10k Ω
	R545			RCX6JATZ0103	CARBON RES. 1/6W J 10k Ω
	R546			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R547	A,C		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R548	B		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R549	C		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R550	A,B		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R553			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R555			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R560			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R567			RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R568			RRXAJR5Z0224	CHIP RES. 1/10W J 220k Ω
	R569			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R570			RCX6JATZ0472	CARBON RES. 1/6W J 4.7k Ω
	R572			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R574			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R575			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R576	A,B		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R577			RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
	R578			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R582			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R585			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R586			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R588			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R590			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R592			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R595			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R601			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R617			JW5.0T	BOARD JUMPER D0.6-P5.0
	R618			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R621			RRXAJR5Z0683	CHIP RES. 1/10W J 68k Ω
	R622			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R623			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R624			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R625			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R626			RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R627			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R628			RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R629			RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
	R630			RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R631			RCX4JATZ0151	CARBON RES. 1/4W J 150 Ω
	R643			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R644			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R645			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R646			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R647			RRXAJR5Z0561	CHIP RES. 1/10W J 560 Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R648			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R649			RRXAJR5Z0561	CHIP RES. 1/10W J 560 Ω
	R650			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R653			RCX4JATZ0272	CARBON RES. 1/4W J 2.7k Ω
	R654			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R655			RRXAJR5Z0561	CHIP RES. 1/10W J 560 Ω
	R656			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R660			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R661			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R662			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R663			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R664			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R665			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R667			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R668			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R1502			RCX6JATZ0473	CARBON RES. 1/6W J 47k Ω
	R1503			RCX4JATZ0681	CARBON RES. 1/4W J 680 Ω
	R1504			RCX4JATZ0681	CARBON RES. 1/4W J 680 Ω
	R1509			RRXAFR5H2000	CHIP RES. 1/10W F 200 Ω
	R1510			RRXAFR5H2000	CHIP RES. 1/10W F 200 Ω
	R1511			RRXAFR5H2000	CHIP RES. 1/10W F 200 Ω
	R1512			RRXAFR5H2000	CHIP RES. 1/10W F 200 Ω
	R1513			RRXAFR5H2000	CHIP RES. 1/10W F 200 Ω
	R1515			RCX6JATZ0223	CARBON RES. 1/6W J 22k Ω
	R1516			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1517			RRXAJR5Z0270	CHIP RES. 1/10W J 27 Ω
	R1522			RCX4JATZ0471	CARBON RES. 1/4W J 470 Ω
	R1523			RRXAJR5Z0821	CHIP RES. 1/10W J 820 Ω
	R1524			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1525			RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R1526			RCX4JATZ0272	CARBON RES. 1/4W J 2.7k Ω
	R1527			RCX4JATZ0272	CARBON RES. 1/4W J 2.7k Ω
	R1528			RCX4JATZ0272	CARBON RES. 1/4W J 2.7k Ω
	R1529			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1530			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1531			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1532			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1533			RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
	R1534			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1538			CHD1JJ3CH330	CHIP CERAMIC CAP.(1608) CH J 33pF/50V
	R1541			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1542			RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R1543			RRXAJR5Z0124	CHIP RES. 1/10W J 120k Ω
	R1544			RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R1545			RCX4JATZ0682	CARBON RES. 1/4W J 6.8k Ω
	R1546			RCX4JATZ0682	CARBON RES. 1/4W J 6.8k Ω
	R1547			RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R1548			RCX6JATZ0152	CARBON RES. 1/6W J 1.5k Ω
	R1549			RCX4JATZ0151	CARBON RES. 1/4W J 150 Ω
	R1550			RCX4JATZ0331	CARBON RES. 1/4W J 330 Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R1551			RCX4JATZ0391	CARBON RES. 1/4W J 390 Ω
	R1552			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1553			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1554			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1557			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R1558			RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R1559			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1560			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1561			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1562			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1563			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1564			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1565			RRXAJR5Z0124	CHIP RES. 1/10W J 120k Ω
	R1566			RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R1567			RCX4JATZ0682	CARBON RES. 1/4W J 6.8k Ω
	R1568			RRXAJR5Z0683	CHIP RES. 1/10W J 68k Ω
	R1569			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R1570			RRXAJR5Z0683	CHIP RES. 1/10W J 68k Ω
	R1572			RRXAFR5H1000	CHIP RES. 1/10W F 100 Ω
	R1573			RRXAFR5H1501	CHIP RES. 1/10W F 1.5k Ω
	R1574			RCX4JATZ0561	CARBON RES. 1/4W J 560 Ω
	R1575			RRXAFR5H4701	CHIP RES. 1/10W F 4.7k Ω
	R1576			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R1578			RRXAJR5Z0823	CHIP RES. 1/10W J 82k Ω
	R1579			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1580			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1581			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1582			RCX4JATZ0181	CARBON RES. 1/4W J 180 Ω
	R1584			RCX4JATZ0181	CARBON RES. 1/4W J 180 Ω
	R1586			RCX4JATZ0100	CARBON RES. 1/4W J 10 Ω
	R1587			RCX4JATZ0120	CARBON RES. 1/4W J 12 Ω
	R1593			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1594			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1595			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1596			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1597			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1598			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1599			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1601			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1602			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1603	C		RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1604	C		RRXAJR5Z0821	CHIP RES. 1/10W J 820 Ω
	R1605			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1606			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1607			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R1608			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1609			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1610			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1611			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1612			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1613			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1614			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1615			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1616			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R1617			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1618			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R1619			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1620			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1621			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1622			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1623			RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R1624			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1625			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1626			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1627			RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R1628			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1629			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1630			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1631			RRXAFR5H8201	CHIP RES. 1/10W F 8.2k Ω
	R1632			RRXAFR5H1302	CHIP RES. 1/10W F 13k Ω
	R1633			RRXAJR5Z0133	CHIP RES. 1/10W J 13k Ω
	R1634			RRXAFR5H8201	CHIP RES. 1/10W F 8.2k Ω
	R1635			RRXAFR5H1302	CHIP RES. 1/10W F 13k Ω
	R1636			RRXAJR5Z0133	CHIP RES. 1/10W J 13k Ω
	R1637			RCX4JATZ0681	CARBON RES. 1/4W J 680 Ω
	R1638			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1639			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1640			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1641			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1642			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1643			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1644			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1645			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1646			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1647			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1648			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1649			RRXAJR5Z0272	CHIP RES. 1/10W J 2.7k Ω
	R1650			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1651			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1652			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1653			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R1654			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1655			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1656			RCX6JATZ0332	CARBON RES. 1/6W J 3.3k Ω
	R1657			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1658			RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R1659			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1660			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1661			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R1663			RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R1664			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1665			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1666			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1667			RRXAJR5Z0303	CHIP RES. 1/10W J 30k Ω
	R1668			RCX4JATZ0182	CARBON RES. 1/4W J 1.8k Ω
	R1669			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1670			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1671			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1672			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1674			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R1675			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1676			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1677			RCX4JATZ0471	CARBON RES. 1/4W J 470 Ω
	R1678			RCX4JATZ0471	CARBON RES. 1/4W J 470 Ω
	R1679			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1680			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1681			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1682			RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R1683			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1684			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1685			RCX6JATZ0101	CARBON RES. 1/6W J 100 Ω
	R1686			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1687			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1691			RRXAJR5Z0331	CHIP RES. 1/10W J 330 Ω
	R1692			RRXAJR5Z0331	CHIP RES. 1/10W J 330 Ω
	R1693	A,B		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1694			RRXAJR5Z0331	CHIP RES. 1/10W J 330 Ω
	R1695			RRXAJR5Z0331	CHIP RES. 1/10W J 330 Ω
	R1696			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1697			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1699			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1700			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1701			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1702			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1703			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1704			RRXAJR5Z0105	CHIP RES. 1/10W J 1M Ω
	R1705			RRXAJR5Z0105	CHIP RES. 1/10W J 1M Ω
	R1706			RRXAJR5Z0105	CHIP RES. 1/10W J 1M Ω
	R1707			RRXAJR5Z0105	CHIP RES. 1/10W J 1M Ω
	R1708			RCX4JATZ0620	CARBON RES. 1/4W J 62 Ω
	R1709			RRXAJR5Z0100	CHIP RES. 1/10W J 10 Ω
	R1710			RRXAJR5Z0100	CHIP RES. 1/10W J 10 Ω
	R1711			RRXAJR5Z0330	CHIP RES. 1/10W J 33 Ω
	R1712			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1714			RCX4JATZ0182	CARBON RES. 1/4W J 1.8k Ω
	R1716			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1721			RRXAJR5Z0474	CHIP RES. 1/10W J 470k Ω
	R1722			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1723			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1724			RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R1725			RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R1726			RCX6JATZ0123	CARBON RES. 1/6W J 12k Ω
	R1727			RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R1728			RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R1730			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1731			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1732			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1734			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1735			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1736			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1737			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1738			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R1741			CHD1JJ3CH680	CHIP CERAMIC CAP.(1608) CH J 68pF/50V
	R1742	A,B		RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1742	C		RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	SWITCHES				
	SW506		P000465640	SSC0101MCE03	LEAF SWITCH MXS01830MVP0
	SW507		P000465650	SSR0106KB003	ROTARY MODE SWITCH SSS-53MD
	SW521		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW522		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW523		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW524		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW525		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW1501		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW1502		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	MISCELLANEOUS				
	B-9H			0VM409508	BUSH LED(F) H3700UD
	B-9I			0VM409508	BUSH LED(F) H3700UD
	B-10			1VM420438A	NEW SHIELD ASSEMBLY H9700ED
	B-16			0VM412870	DOUBLE SIDE TAPE HB200UD
	B-31			0VM304573	ROHM HOLDER H7770JD
	FL601		P000472820	TVFD1C0FT050	VFD 7-BT-306NS
	JK1502		P000465520	JXRL010LY140	JACK RCA MSP-281V41-B(B110)
	JK1503		P000465530	JXRL020LY120	JACK RCA MSP-382V-12 NILF
	JK1504		P000459850	JXGL210LY008	RGB CONNECTOR MRC-021V-05 ABS(B110
	JK1505		P000457070	JXEL040LY003	JACK S TYPE MDC-050V-2.4 LF(B110
	L-2A			GBCP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	L-2B			GBCP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	L-9P			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	PS502			QPWZP1302C70	PHOTO INTERRUPTER RPI-302C70
	RM1501		P000457340	USESJRSKK039	REMOTE RECEIVER PIC-37043LU
	TP1521			JW7.0T	BOARD JUMPER D0.6-P7.0
	TP1522			JW7.0T	BOARD JUMPER D0.6-P7.0
	TP301			JW24.5T	BOARD JUMPER D0.6-P24.5
	TP501			JW10.5T	BOARD JUMPER D0.6-P10.5
	TP502			JW7.0T	BOARD JUMPER D0.6-P7.0
	TP503			JW7.0T	BOARD JUMPER D0.6-P7.0
	TP504			JW7.0T	BOARD JUMPER D0.6-P7.0
	TU1501	A,B	P000460020	UTUNPLGAL017	TUNER UNIT TMFE2-301A
	TU1501	C	P000461900	UTUNPSLAL005	TUNER UNIT TMFE2-401A
	VR501			VRCB104HH014	CARBON P.O.T. VZ067TL1 B104 PB(F)
	W1		P000472840	WX1E4340-001	FFC AV-MAIN 30P 30PIN/ TL350MM
	X301		P000468200	FXC445LLN004	XTAL 4.433619MHz
	X501			FXD126LDS002	XTAL 12MHz 12.000MHz
	X1501		P000483200	FX0323LDS001	XTAL DT38 32.768kHZ
	X1502			FY0805PMR002	CERAMIC RESONETOR CSTLS8M00G56-B0

BOARD POWER SWITCH

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
				---------	BOARD POWER SWITCH (AV PCB B) Consists of the following:
			DIODE		
	D1605		P000468280	NPQZ1CHJGTN N	LED(GREEN) LTL1CHJGTNN
			SWITCH		
	SW1601		P000472800	SST0101HH013	TACT SWITCH KSM0614B
			MISCELLANEOUS		
	W6		P000472880	WX1E4340-006	PARALLEL WIRE 4P AWG26#2651/ 126MM

BOARD SENSOR

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	P4		P000472720	1VSA13519	BOARD SENSOR Consists of the following:
			TRANSISTORS		
	Q503			NPWZT2046B12	PHOTO TRANSISTOR PT204-6B-12
	Q504			NPWZT2046B12	PHOTO TRANSISTOR PT204-6B-12

BOARD PW/SW

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
⚠ ⚠	P3 P3	A,C B	--------- ---------	1VSA14932 1VSA14930	BOARD PW/SW BOARD PW/SW Consists of the following:
⚠	P3-4	A,C	P000483620	1VSA14932-4	BOARD POWER SUPPLY (PW/SW-A)
⚠	P3-4	B	P000483580	1VSA14930-4	BOARD POWER SUPPLY (PW/SW-A)
	P3-2	A,C	P000483600	1VSA14932-2	BOARD FRONT JACK (PW/SW-B)
	P3-2	B	P000483560	1VSA14930-2	BOARD FRONT JACK (PW/SW-B)
	P3-1	A,C	P000483590	1VSA14932-1	BOARD SWITCH (PW/SW-C)
	P3-1	B	P000483550	1VSA14930-1	BOARD SWITCH (PW/SW-C)
	P3-3	A,C	P000483610	1VSA14932-3	BOARD REAR JACK (PW/SW-D)
	P3-3	B	P000483570	1VSA14930-3	BOARD REAR JACK (PW/SW-D)

BOARD POWER SUPPLY

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
⚠	P3-4	A,C	P000483620	1VSA14932-4	BOARD POWER SUPPLY (PW/SW-A)
⚠	P3-4	B	P000483580	1VSA14930-4	BOARD POWER SUPPLY (PW/SW-A) Consists of the following:
			CAPACITORS		
	C013			CE1JMZADL471	ELECTROLYTIC CAP 470µF/50V M
	C014			CE1EMASDL471	ELECTROLYTIC CAP. 470µF/25V M
	C020			CE1JMASDL220	ELECTROLYTIC CAP. 22µF/50V M
	C022			CE1GMASDL471	ELECTROLYTIC CAP. 470µF/35V M
⚠	C1001			CT2E683DC011	METALIZED FILM CAP. 0.068µF/250V K
	C1004			CA2H221S6029	ELECTROLYTIC CAP. 220µF/400V M
⚠	C1006			CCN2EMA0E222	SAFTY CAP. 2200pF/250V
	C1029			CCD3DKP0B221	CERAMIC CAP. B K 220pF/2KV
	C1030			CMA2AJS00683	FILM CAP.(P) 0.068µF/ 100V J
	C1034			CMA2AJS00393	FILM CAP.(P) 0.039µF/ 100V J
	C1035			CE0KMZADL332	ELECTROLYTIC CAP. 3300µF/6.3V SL
	C1036			CCD2JKP0B471	CERAMIC CAP. B K 470pF/500V
	C1037			CE1EMZADL222	ELECTROLYTIC CAP. 2200µF/25V SL
	C1039			CE1CMASDL471	ELECTROLYTIC CAP. 470µF/16V M
	C1100			CCA1JZTFZ104	CERAMIC CAP.(AX) F Z 0.1µF/50V
	C1102			CCD2JKP0B471	CERAMIC CAP. B K 470pF/500V
	C1104			CE1AMZADL472	ELECTRIC CAP. 4700µF/ 10V
	C1105			CE1AMZADL472	ELECTRIC CAP. 4700µF/ 10V
	C1107			CE1AMZADL222	ELECTROLYTIC CAP. 2200µF/10V SL
	C1110			CE1CMASDL221	ELECTROLYTIC CAP. 220µF/16V M
	C1112			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1113			CHD1JK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V
	C1114			CE0KMASDL102	ELECTROLYTIC CAP. 1000µF/6.3V M
	C1115			CE0KMASDL102	ELECTROLYTIC CAP. 1000µF/6.3V M
	C1116			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M
	C1117			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1118			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1119			CE1CMASDL471	ELECTROLYTIC CAP. 470µF/16V M
	C1121			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1126			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1127			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M
	C1128			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M
	C1129			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M
	C1130			CHD1JK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V
	C1131			CHD1JK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V
	C1132			CE0KMASDL102	ELECTROLYTIC CAP. 1000µF/6.3V M
	C1133			CMA2AJS00102	FILM CAP.(P) 0.001µF/ 100V J
	C1140			CE1CMASDL101	ELECTROLYTIC CAP. 100µF/16V M
	C1141			CHD1JK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V
	C1142			CHD1JK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V
			CONNECTORS		
	CN1001			JCFNG30JG020	FMN CONNECTOR TOP 30P 30FMN-BTRK-A(LF)(SN)
	CN1002			J3PHC02JG017	PH CONNECTOR (WHITE) TOP 2P B2B-PH-K-S(LF)
			DIODES		
	D013			NDQZ000BA158	RECTIFIER DIODE BA158
	D014			NDQZ000SB390	SCHOTTKY BARRIER DIODE SB390
	D015			NDLZ001N5397	DIODE 1N5397-B
	D016			NDQZ000SB340	SCHOTTKY BARRIER DIODE SB340
	D017			QDTB00MTZJ16	ZENER DIODE MTZJT-7716B

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	D018			NDQZ000BA158	RECTIFIER DIODE BA158
	D019			NDQZ000FR203	RECTIFIER DIODE FR203-B/P
	D020			JW5.0T	BOARD JUMPER D0.6-P5.0
	D1001			NDLZ001N5397	DIODE 1N5397-B
	D1002			NDLZ001N5397	DIODE 1N5397-B
	D1003			NDLZ001N5397	DIODE 1N5397-B
	D1004			NDLZ001N5397	DIODE 1N5397-B
	D1006			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1011			QDTC00MTZJ24	ZENER DIODE MTZJT-7724C
	D1022			QDTB0MTZJ5R6	ZENER DIODE MTZJT-775.6B
	D1023			QDTA00MTZJ36	ZENER DIODE MTZJT-7736A
	D1025			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1030			NDQZ000SB340	SCHOTTKY BARRIER DIODE SB340
	D1031			NDQZ000SB390	SCHOTTKY BARRIER DIODE SB390
	D1032			NDQZ000SB340	SCHOTTKY BARRIER DIODE SB340
	D1035			NDQZ000SB390	SCHOTTKY BARRIER DIODE SB390
	D1101			NDQZ000SB140	SCHOTTKY BARRIER DIODE SB140
	D1102			QDTB0MTZJ6R8	ZENER DIODE MTZJT-776.8B
	D1103			NDQZ000BA157	RECTIFIER DIODE BA157
	D1107			JW5.0T	BOARD JUMPER D0.6-P5.0
	D1108			QDTB00MTZJ20	ZENER DIODE MTZJT-7720B
	D1109			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1110			QDTB00MTZJ24	ZENER DIODE MTZJT-7724B
	D1113			JW5.0T	BOARD JUMPER D0.6-P5.0
	D1114			JW5.0T	BOARD JUMPER D0.6-P5.0
	D1115			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1116			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1117			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1118			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1119			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1120			QDTB00MTZJ10	ZENER DIODE MTZJT-7710B
	D1121			JW10.0T	BOARD JUMPER D0.6-P10.0
	D1122			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1123			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1124			QDTC0MTZJ5R6	ZENER DIODE MTZJT-775.6C
	D1125			JW5.0T	BOARD JUMPER D0.6-P5.0
	D1126			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1127			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1128			NDQZ000SB140	SCHOTTKY BARRIER DIODE SB140
	D1129			QDTB0MTZJ6R8	ZENER DIODE MTZJT-776.8B
	D1130			QD1Z001SS400	SWITCHING DIODE 1SS400
	D1131			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1132			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1133			QD1Z001SS400	SWITCHING DIODE 1SS400
	D1134			QD1Z001SS400	SWITCHING DIODE 1SS400
	D1135			NDLZ001N5397	DIODE 1N5397-B
	D1136			NDLZ001N5397	DIODE 1N5397-B
	D1137			QD1Z001SS400	SWITCHING DIODE 1SS400
	D1138			QD1Z001SS400	SWITCHING DIODE 1SS400
	D1139			QD1Z001SS400	SWITCHING DIODE 1SS400
	D1142			QD1Z001SS400	SWITCHING DIODE 1SS400
	D1144			QD1Z001SS400	SWITCHING DIODE 1SS400
	D1145			QD1Z001SS400	SWITCHING DIODE 1SS400
				ICS	
⚠	IC1001		P000459900	NPEA000EL817	PHOTOCOUPLER EL817A
	IC1101		P000459940	NSZBA0TJY036	IC SHUNT REGULATOR KIA431-AT/P
	IC1102		P000459940	NSZBA0TJY036	IC SHUNT REGULATOR KIA431-AT/P
	IC1103		P000457260	QSZBA0SSH054	VOLTAGE REGULATOR PQ070XF01SZH
	IC1104		P000457260	QSZBA0SSH054	VOLTAGE REGULATOR PQ070XF01SZH
				COILS	
	L1001			---------	BEAD CORE ASSEMBLY E9770ED
	L1001-1			JW20.0T	BOARD JUMPER D0.6-P20.0
	L1001-2			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	L1002			---------	BEAD CORE ASSEMBLY E9770ED
	L1002-1			JW20.0T	BOARD JUMPER D0.6-P20.0
	L1002-2			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
⚠	L1003			LLEG0Z0TU001	COIL LINE FILTER 56MH TLF24HB5630R3
	L1004			---------	BEAD CORE ASSEMBLY E9770ED
	L1004-1			JW20.0T	BOARD JUMPER D0.6-P20.0
	L1004-2			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	L1005			---------	BEAD CORE ASSEMBLY E9770ED
	L1005-1			JW20.0T	BOARD JUMPER D0.6-P20.0
	L1005-2			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	L1013			LLC220KKV007	POWER INDUCTORS TWKBNP-220K
	L1014			LLC100KTU026	RADIAL LEADED INDUCTOR LHL13NB100K
	L1100			LLC180KKV007	POWER INDUCTORS TWKBNP-180K
	L1101			LLC180KKV007	POWER INDUCTORS TWKBNP-180K
				TRANSISTORS	
⚠	Q1001			QFWZ2SK3798Q	MOS FET 2SK3798(Q)
	Q1003			QQSY2SC2120F	TRANSISTOR 2SC2120-Y(TE2 F T)
	Q1100			NQEYKTC2026P	TRANSISTOR(PB FREE) KTC2026-Y/P
	Q1101			NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q1102			QQWZ00S2Y52Q	TRANSISTOR S2Y52(FUNAI Q H)
	Q1103			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1104			NQSYKTC3203P	TRANSISTOR KTC3203-Y-AT/P

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	Q1105			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1106			NQSYKTC3266P	TRANSISTOR KTC3266-Y-AT/P
	Q1107			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1108			NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q1109			NQEYKTC2026P	TRANSISTOR(PB FREE) KTC2026-Y/P
	Q1110			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1111			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1114			NQSYKTA1267P	TRANSISTOR KTA1267-Y-AT/P
	Q1115			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	RESISTORS				
	R068			RCX6JATZ0223	CARBON RES. 1/6W J 22k Ω
⚠	R1001			RCX2565FS001	CARBON RES. 1/2W K 5.6M Ω
	R1003			RW031R5PAK10	CEMENT RESISTOR 3W K 1.5 Ω
	R1004			RW051R0PAK10	CEMENT RESISTOR 5W J 1.0 Ω H 10MM
	R1005			RCX4JATZ0564	CARBON RES. 1/4W J 560k Ω
	R1006			RCX4JATZ0684	CARBON RES. 1/4W J 680k Ω
	R1007			RCX4JATZ0684	CARBON RES. 1/4W J 680k Ω
	R1008			RCX4JATZ0824	CARBON RES. 1/4W J 820k Ω
	R1009			RCX4JATZ0220	CARBON RES. 1/4W J 22 Ω
	R1029			RCX4JATZ0184	CARBON RES. 1/4W J 180k Ω
	R1033			RCX4JATZ0560	CARBON RES. 1/4W J 56 Ω
	R1034			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1035			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1036			RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R1037			RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R1039			RCX4JATZ0122	CARBON RES. 1/4W J 1.2k Ω
	R1043			RCX4JATZ0152	CARBON RES. 1/4W J 1.5k Ω
	R1100			RRXAJR5Z0391	CHIP RES. 1/10W J 390 Ω
	R1101			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1102			RRXAFR5H2001	CHIP RES. 1/10W F 2k Ω
	R1104			RCX4JATZ0182	CARBON RES. 1/4W J 1.8k Ω
	R1106			RRXAR47HH007	CHIP RES.(1608) 1/10W J 0.47 Ω
	R1107			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1108			RCX4JATZ0152	CARBON RES. 1/4W J 1.5k Ω
	R1110			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1111			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1112			RRXAFR5H3000	CHIP RES. 1/10W F 300 Ω
	R1113			RRXAFR5H1001	CHIP RES. 1/10W F 1.0k Ω
	R1114			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1115			RRXAFR5H1001	CHIP RES. 1/10W F 1.0k Ω
	R1117			RCX4JATZ0222	CARBON RES. 1/4W J 2.2k Ω
	R1118			RN03102ZU001	METAL OXIDE FILM RES. 3W J 1.0k Ω
	R1119			RRXAJR5Z0224	CHIP RES. 1/10W J 220k Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R1120			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1123			RCX4JATZ0112	CARBON RES. 1/4W J 1.1k Ω
	R1124			RCX4JATZ0112	CARBON RES. 1/4W J 1.1k Ω
	R1125			RCX4JATZ0112	CARBON RES. 1/4W J 1.1k Ω
	R1126			RCX4JATZ0682	CARBON RES. 1/4W J 6.8k Ω
	R1127			RCX4JATZ0112	CARBON RES. 1/4W J 1.1k Ω
	R1128			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1129			RCX6JATZ0104	CARBON RES. 1/6W J 100k Ω
	R1130			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1131			RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R1132			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1133			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1134			RN02820ZU001	METAL OXIDE FILM RES. 2W J 82 Ω
	R1135			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1136			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1138			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1139			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R1140			RCX2JZPZ0101	CARBON RES. 1/2W J 100 Ω
	R1141			RRXAJR5Z0272	CHIP RES. 1/10W J 2.7k Ω
	R1142			RCX4JATZ0222	CARBON RES. 1/4W J 2.2k Ω
	R1143			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1144			RRXAFR5H1002	CHIP RES. 1/10W F 10k Ω
	R1145			RRXAFR5H1002	CHIP RES. 1/10W F 10k Ω
	R1146			RRXAFR5H1502	CHIP RES. 1/10W F 15k Ω
	R1147			RRXAFR5H1002	CHIP RES. 1/10W F 10k Ω
	R1148			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R1149			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1150			RCX4JATZ0202	CARBON RES. 1/4W J 2k Ω
	R1151			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1152			RRXAFR5H2200	CHIP RES. 1/10W F 220 Ω
	R1153			RRXAFR5H1501	CHIP RES. 1/10W F 1.5k Ω
	R1154			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1155			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1157			RCX4JATZ0222	CARBON RES. 1/4W J 2.2k Ω
	R1158			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1159			RRXAJR5Z0330	CHIP RES. 1/10W J 33 Ω
	R1160			RRXAJR5Z0224	CHIP RES. 1/10W J 220k Ω
	R1161			RCX4JATZ0824	CARBON RES. 1/4W J 820k Ω
	R1162			RCX4JATZ0100	CARBON RES. 1/4W J 10 Ω
	R1163			RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R1164			RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R1165			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1166			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1167			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	MISCELLANEOUS				
⚠	AC1001	A,C	P000468380	WAE0172LW011	POWER CORD PE8G2CG9G0AB05
⚠	AC1001	B	P000468300	WAB0182LW016	POWER CORD PE8G2X91H0AA061
	B-5A			1VM422057	POWER HEATSINK E4340UD
	B-5B			1VM422057	POWER HEATSINK E4340UD
	CL1001			JCFNG30JG020	FMN CONNECTOR TOP 30P 30FMN-BTRK-A(LF)(SN)

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
⚠	F1001		P000459950	PAGC20BW3162	FUSE T1.6AL/250V
	FH1001			XH01Z00LY002	FUSE HOLDER MSF-015 LF (B110)
	FH1002			XH01Z00LY002	FUSE HOLDER MSF-015 LF (B110)
	L-9N			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	L-9O			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
⚠	SA1001		P000457210	NVQZ10D471KB	SURGE ABSORBER 470V+-10PER
⚠	T1001			LTTZPE0KT008	TRANS POWER 6716
	W2		P000472850	WX1E4340-002	FFC PW-MAIN 30P 30PIN/ TL280MM
	W3		P000472860	WX1E4340-003	FFC AV-PW 30P 30PIN/ TL90MM
	W4		P000472870	WX1E4340-004	FFC AV-SW 20P 20PIN/ TL140MM
	W8		P000472900	WX1E4340-008	WIRE ASSEMBLY 4P AWG22/ 105MM

BOARD FRONT JACK

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	P3-2	A,C	P000483600	1VSA14932-2	BOARD FRONT JACK (PW/SW-B)
	P3-2	B	P000483560	1VSA14930-2	BOARD FRONT JACK (PW/SW-B)
					Consists of the following:
			CAPACITORS		
	C3006			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C3007			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
			CONNECTOR		
	CN3001			JCFNG20JG022	FMN CONNECTOR SIDE 20P 20FMN-STRK-A(LF)(SN)
			DIODES		
	D3001			NPQZ0012541T	LED(RED) 1254IT
	D3002			NPQZ0012541T	LED(RED) 1254IT
	D3003		P000468280	NPQZ1CHJGTNN	LED(GREEN) LTL1CHJGTNN
	D3004			NPQ3L1CHCBK2	LED(BLUE) LTL1CHCBK2-F
	D3005			NPQZ1CHKYKNN	LED(AMBER YELLOW) LTL1CHKYKNN
	D3008			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D3009			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D3010			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D3011			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
			IC		
	IC3001		P000457080	JXEL040RP003	MINI DIN SOCKET MDC1-34-020
			RESISTORS		
	R3001			RCX4JATZ0100	CARBON RES. 1/4W J 10 Ω
	R3002			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R3003			RCX4JATZ0100	CARBON RES. 1/4W J 10 Ω
	R3004			RCX6JATZ0121	CARBON RES. 1/6W J 120 Ω
	R3005			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R3006			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R3007			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R3008			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R3010			RCX6JATZ0151	CARBON RES. 1/6W J 150 Ω
	R3011			RCX6JATZ0470	CARBON RES. 1/6W J 47 Ω
	R3013			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R3014			RRXAJR5Z0821	CHIP RES. 1/10W J 820 Ω
	R3015			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R3016			RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
	R3017			RRXAJR5Z0272	CHIP RES. 1/10W J 2.7k Ω
	R3018			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R3022			RCX4JATZ0620	CARBON RES. 1/4W J 62 Ω
			SWITCHES		
	SW3001		P000472810	SST0101HH036	SWITCH TACT KSM0634B PB(F)
	SW3002		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW3003		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW3004		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW3005		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW3006		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW3007		P000472800	SST0101HH013	TACT SWITCH KSM0614B
			MISCELLANEOUS		
	B-9A			0VM409508	BUSH LED(F) H3700UD
	B-9B			0VM409508	BUSH LED(F) H3700UD
	B-9C			0VM409508	BUSH LED(F) H3700UD
	B-9D			0VM409508	BUSH LED(F) H3700UD
	B-9E			0VM409508	BUSH LED(F) H3700UD
	JK3001		P000457110	JXRL010LY135	JACK RCA(YELLOW) MTJ-032-05B-20(B110)
	JK3002		P000457120	JXRL010LY136	JACK RCA(WHITE) MTJ-032-05B-22(B110)
	JK3003		P000457090	JYRL010LY029	JACK RCA(RED) MTJ-032-05A-21(B110)
	W7		P000472890	WX1E4340-007	PARALLEL WIRE 5P AWG26#2651/ 146MM

BOARD SWITCH

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	P3-1	A,C	P000483590	1VSA14932-1	BOARD SWITCH (PW/SW-C)
	P3-1	B	P000483550	1VSA14930-1	BOARD SWITCH (PW/SW-C)
					Consists of the following:
			DIODE		
	D3007		P000468280	NPQZ1CHJGTNN	LED(GREEN) LTL1CHJGTNN
			RESISTOR		
	R3021			RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
			SWITCHES		
	SW3008		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW3009		P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW3010		P000472800	SST0101HH013	TACT SWITCH KSM0614B
			MISCELLANEOUS		
	B-9F			0VM409508	BUSH LED(F) H3700UD

BOARD REAR JACK

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	P3-3	A,C	P000483610	1VSA14932-3	BOARD REAR JACK (PW/SW-D)
	P3-3	B	P000483570	1VSA14930-3	BOARD REAR JACK (PW/SW-D)
					Consists of the following:
			CAPACITORS		
	C2001			CE1CMASDL101	ELECTROLYTIC CAP. 100μF/16V M
	C2002			CE0KMASDL471	ELECTROLYTIC CAP. 470μF/6.3V M
	C2003			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C2004			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C2005			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C2006			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C2007			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C2008			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C2009			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C2010			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C2011			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C2012			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C2013			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
			DIODES		
	D2001			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2002			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2003			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2004			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2005			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2006			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2007			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2008			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2009			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2010			QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
			COILS		
	L2003			---------	BEAD CORE ASSEMBLY E9770ED
	L2003-1			JW35.0T	BOARD JUMPER D0.6-P35.0
	L2003-2			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
			TRANSISTORS		
	Q2001			NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q2002			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q2003			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
			RESISTORS		
	R2001			RCX6JATZ0681	CARBON RES. 1/6W J 680 Ω
	R2002			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R2003			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R2005			RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R2006			RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R2007			RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R2008			RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R2009			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R2010			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R2011			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R2012			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R2013			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R2014			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
			MISCELLANEOUS		
	B-24			1VM423185	21P PLATE EARTH E7B20ED
	JK2001		P000459840	JXGL210LY006	RGB CONNECTOR MRC-021V-03 ABS(B11
	JW2001		P000460080	WX1E7B20-002	FLAT CABLE 15P AWG26#2651/P2.0/70

BOARD AFV

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	P5 P5	A,B C	P000472710 P000473050	1VSA12639 1VSA13522	BOARD AFV BOARD AFV Consists of the following:
			CAPACITORS		
	C1			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C4			CHD1JJ3CH560	CHIP CERAMIC CAP. CH J 56pF/50V
	C5			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C6			CHD1JJ3CH560	CHIP CERAMIC CAP. CH J 56pF/50V
	C7			CHD1JC3CH3R0	CHIP CERAMIC CAP. CH C 3pF/50V
	C8			CHD1JC3CH3R0	CHIP CERAMIC CAP. CH C 3pF/50V
	C11			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C12			CE1CMASSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C13			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C14			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C15			CE1CMASSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C16			CE1CMASSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C17			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C19			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C20			CE1JMASSL3R3	ELECTROLYTIC CAP. 3.3µF/50V M H7
	C21			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C22			CE1CMASSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C23	C		CHD1AZ30F474	CHIP CERAMIC CAP. F Z 0.47µF/10V
	C24			CE1JMASSLR22	ELECTROLYTIC CAP. 0.22µF/50V M H7
	C27			CCA1JZTFZ104	CERAMIC CAP.(AX) F Z 0.1µF/50V
			CONNECTOR		
	CN1			JTED009ER045	ANGLE PIN HEADER 9P IMSA-6029B-1-09Z003-
			DIODE		
	D2			QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
			IC		
	IC1		P000459920	NSZBA0SP3005	IC AUDIO PROCESSOR MSP3417G-QG-B8-V3
			COILS		
	L1			LLAXKATTU100	INDUCTOR 10µH-K-26T
	L2			JW5.0T	BOARD JUMPER D0.6-P5.0
	L3			LLAXKATTU180	INDUCTOR 18µH-K-26T
	L4			LLAXKATTU100	INDUCTOR 10µH-K-26T
			RESISTORS		
	R1			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R2	C		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R4			RRXAJR5Z0124	CHIP RES. 1/10W J 120k Ω
	R5			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R6			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R7	C		RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
			MISCELLANEOUS		
	X1		P000468230	FXD186LLN001	XTAL 18.432MHz

BOARD ATA

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	P6		P000472730	1VSA13582	BOARD ATA Consists of the following:
CONNECTORS					
	CN3001			JCYKC40JC002	IDC SOCKET 40PIN VT YKF43-0025
	CN3002			JCFHD40HQ007	FPC/FFC CONNECTOR(40PIN) FH12-40S-0.5SH(89)

DECK MECHANISM SECTION

HDD & DVD / Video Cassette Recorder

RD-XV45KE/RD-XV45KB/RD-XV45KF

Deck Mechanism Section

- **Standard Maintenance**
- **Mechanism Alignment Procedures**
- **Disassembly / Assembly of Mechanism**
- **Deck Exploded Views**
- **Deck Parts List**

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STANDARD MAINTENANCE

Service Schedule of Components

This maintenance chart shows you the standard of replacement and cleaning time for each part.
Because those may replace depending on environment and purpose for use, use the chart for reference.

h: Hours ○: Cleaning ●: Replace

Deck		Periodic Service Schedule			
Ref.No.	**Part Name**	**1,000 h**	**2,000 h**	**3,000 h**	**4,000 h**
B2	Cylinder Assembly	○	●	○	●
B3	Loading Motor Assembly			●	
B8	Pulley Assembly		●		●
B587	Tension Lever Assembly		●		●
B31	ACE Head Assembly			●	
B573, B574	Reel S, Reel T			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
*B73	FE Head			●	
*B86	F Brake Assembly (HI)		●		●
B133	Idler Assembly (HI)		●		●
B410	Pinch Arm Assembly		●		●
B414	M Brake (SP) Assembly (HI)		●		●
B416	M Brake (TU) Assembly (HI)		●		●
B525	LDG Belt		●		●

Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / ACE Head / FE Head) using 90% ethyl alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.
   * B73 ------ Recording model only
   * B86 ------ Not used in 2 head model.

Cleaning

Cleaning of Video Head

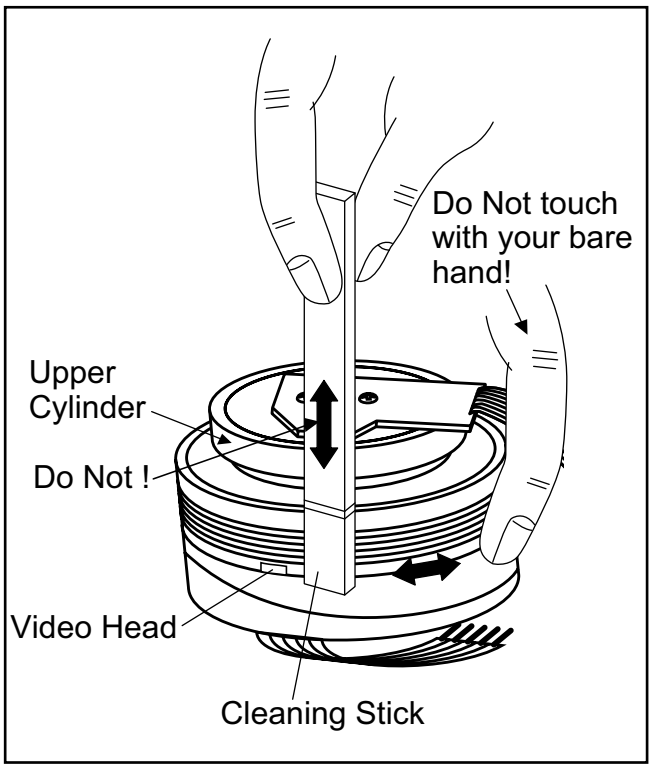
Clean the head with a head cleaning stick or chamois cloth.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% ethyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

Notes:

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.



Cleaning of ACE Head

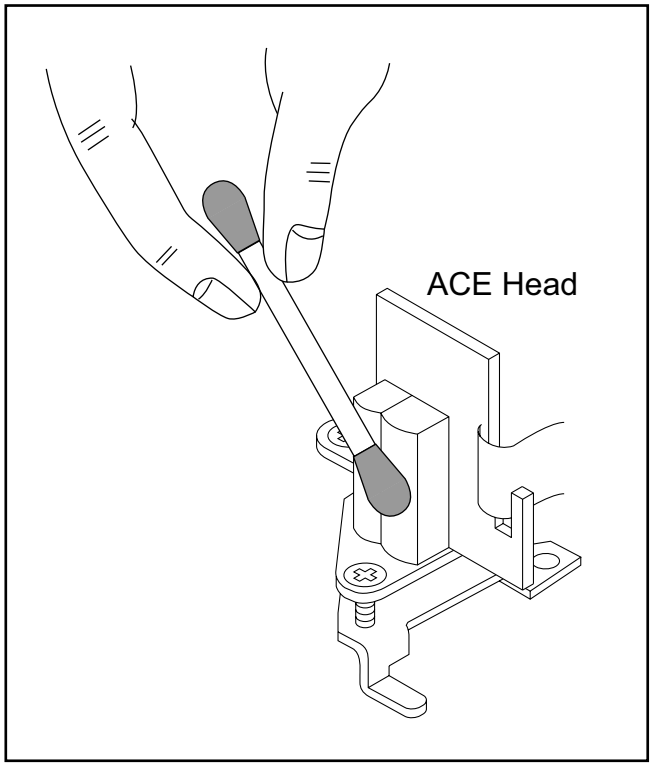
Clean the head with a cotton swab.

Procedure

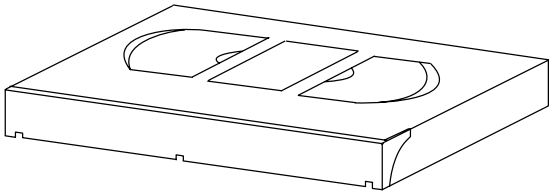
1. Remove the top cabinet.
2. Dip the cotton swab in 90% ethyl alcohol and clean the ACE Head. Be careful not to damage the upper drum and other tape running parts.

Notes:

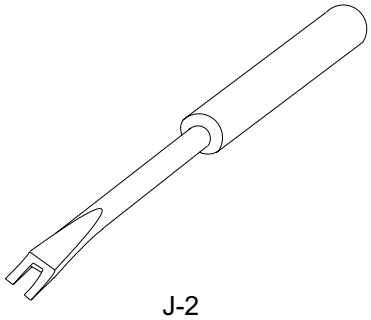
1. Avoid cleaning the ACE Head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



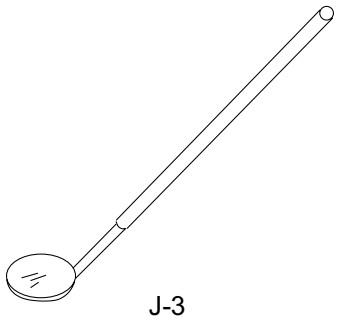
SERVICE FIXTURE AND TOOLS



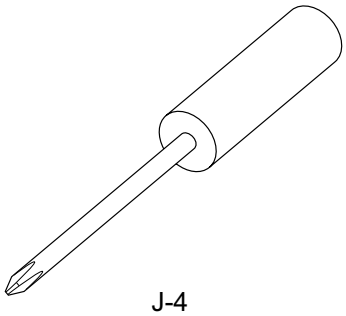
J-1-1, J-1-2



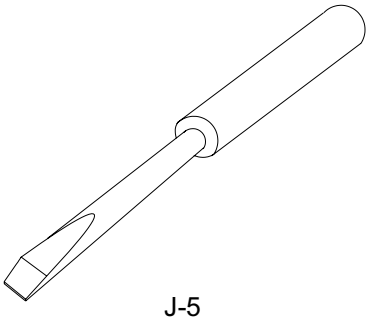
J-2



J-3



J-4



J-5

Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL6A	Head Adjustment of ACE Head
J-1-2	Alignment Tape	FL6N8 (2 Head model) FL6NS8 (4 Head model)	Azimuth and X Value Adjustment of ACE Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj. Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj. Screwdriver +	Available Locally	ACE Head Height
J-5	Flat Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 for a minute or two to complete this task.

To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Make sure that the Moving guide preparations are in the Eject Position.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
5. Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

B. Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.
2. Remove the Top Case and Front Assembly.
3. Turn the LDG Belt in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.

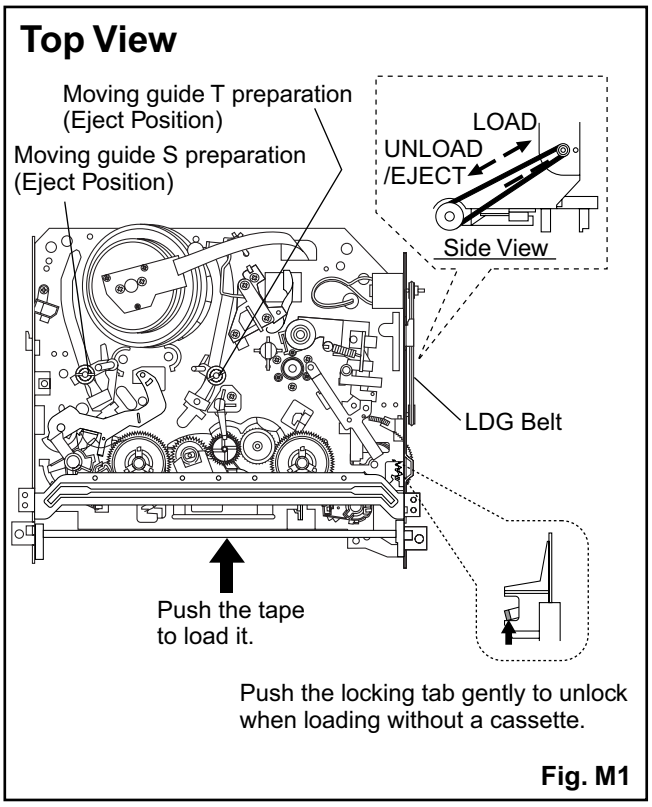


Fig. M1

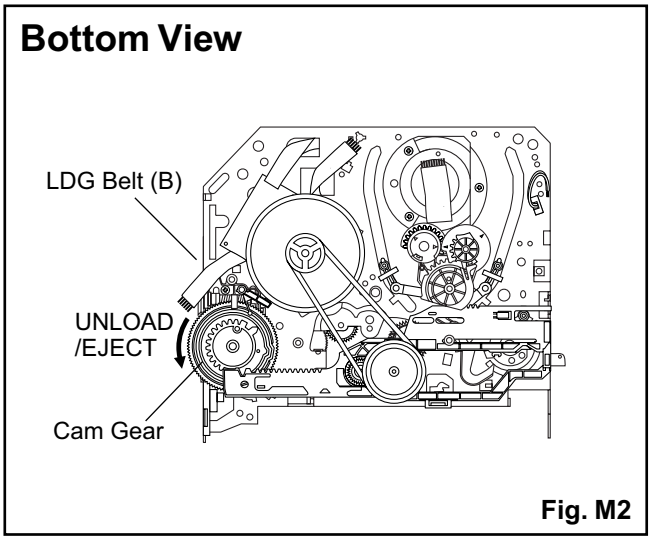


Fig. M2

1. Tape Interchangeability Alignment

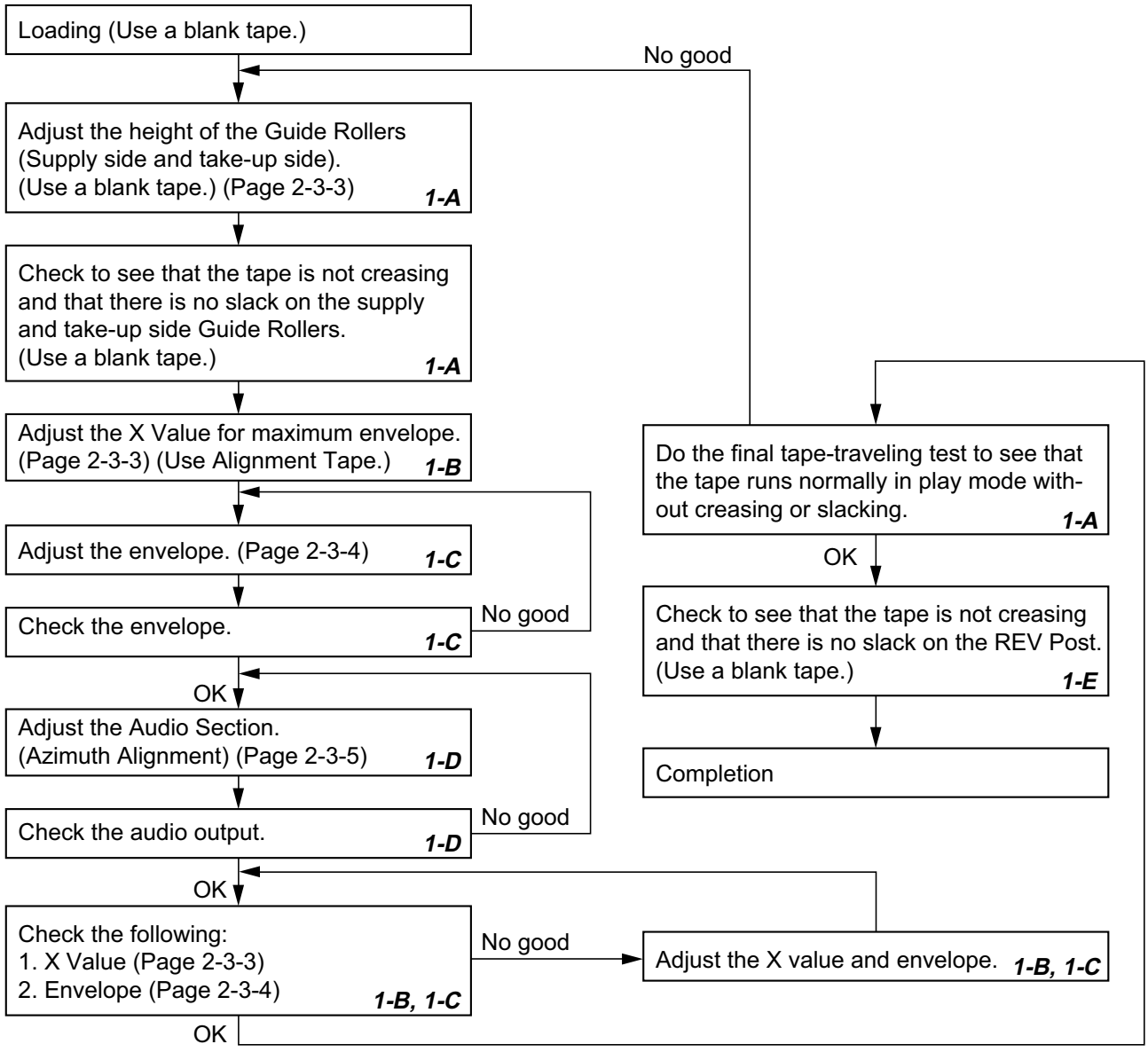
Note:
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the preset position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

Dual Trace Oscilloscope
VHS Alignment Tape (FL6NS8)
Guide Roller Adj. Screwdriver
Flat Screwdriver (Purchase Locally)

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling


Loading (Use a blank tape.)
No good
Adjust the height of the Guide Rollers (Supply side and take-up side). (Use a blank tape.) (Page 2-3-3) 1-A
Check to see that the tape is not creasing and that there is no slack on the supply and take-up side Guide Rollers. (Use a blank tape.) 1-A
Adjust the X Value for maximum envelope. (Page 2-3-3) (Use Alignment Tape.) 1-B
Adjust the envelope. (Page 2-3-4) 1-C
Check the envelope. 1-C
No good
OK
Adjust the Audio Section. (Azimuth Alignment) (Page 2-3-5) 1-D
Check the audio output. 1-D
No good
OK
Check the following:
1. X Value (Page 2-3-3)
2. Envelope (Page 2-3-4) 1-B, 1-C
No good
Adjust the X value and envelope. 1-B, 1-C
OK
Do the final tape-traveling test to see that the tape runs normally in play mode without creasing or slacking. 1-A
OK
Check to see that the tape is not creasing and that there is no slack on the REV Post. (Use a blank tape.) 1-E
Completion

1-A. Preliminary/Final Checking and Alignment of Tape Path

Purpose:

To make sure that the tape path is well stabilized.

Symptom of Misalignment:

If the tape path is unstable, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Playback a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig. M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

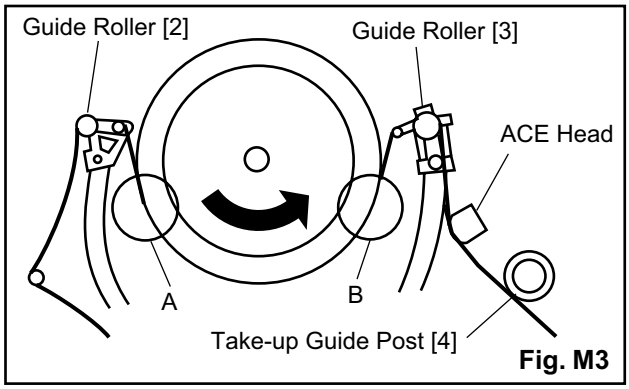


Fig. M3

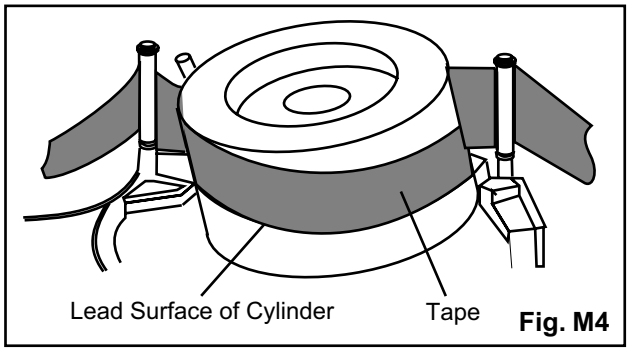


Fig. M4

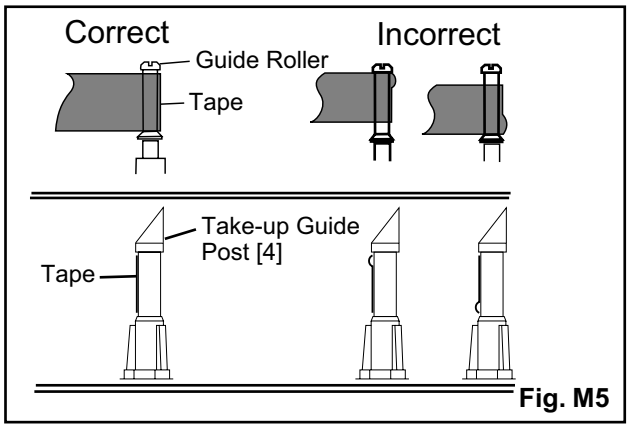


Fig. M5

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and ACE Head. (Fig. M3 and M5)
4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the ACE Head. (Fig. M6)

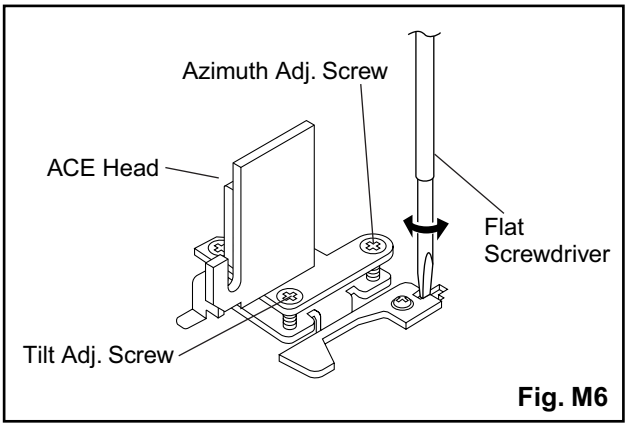


Fig. M6

1-B. X Value Alignment

Purpose:

To obtain maximum PB FM envelope signal at the preset position of the Tracking Control Circuit, align the Horizontal Position of the ACE Head.

Symptom of Misalignment:

If the Horizontal Position of the ACE Head is not properly aligned, maximum PB FM envelope cannot be obtained at the preset position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) and TP503 (CTL) on the Main CBA. Use TP504 (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (FL6NS8) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the preset position by pressing CH UP button and then “PLAY” button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the Flat Screwdriver so that the PB FM signal at TP301 (C-PB) is maximum. (Fig. M6)

5. To shift the CTL waveform, press CH UP or CH DOWN button on the remote control unit. Then make sure that the maximum output position of PB FM envelope signal becomes within ±2ms from preset position.

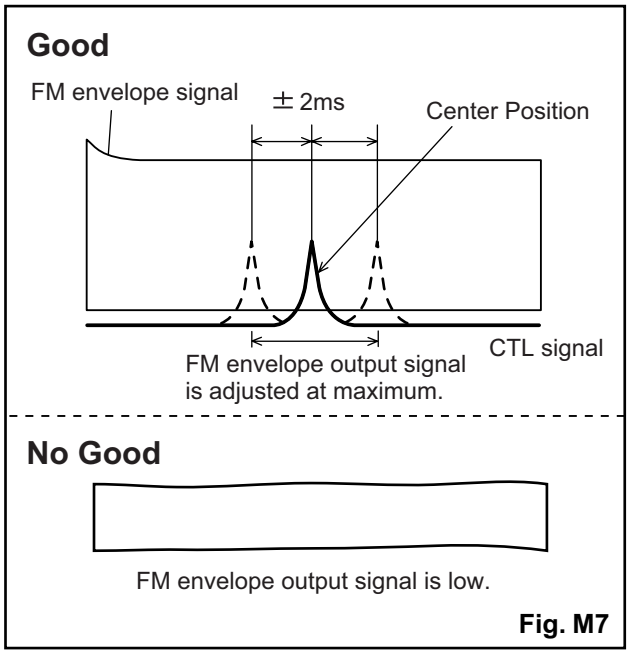


Fig. M7

6. Set the Tracking Control Circuit to the preset position by pressing CH UP button and then “PLAY” button on the unit.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture, adjust the Guide Rollers so that the PB FM envelope becomes as flat as possible.

Symptom of Misalignment:

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) on the Main CBA. Use TP504 (RF-SW) as a trigger.
2. Playback the Gray Scale on the Alignment Tape (FL6NS8). Set the Tracking Control Circuit to the preset position by pressing CH UP button and then “PLAY” button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M10.
4. If the envelope is as shown in Fig. M9, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M10.
5. When Guide Rollers [2] and [3] (Refer to Fig. M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M10.

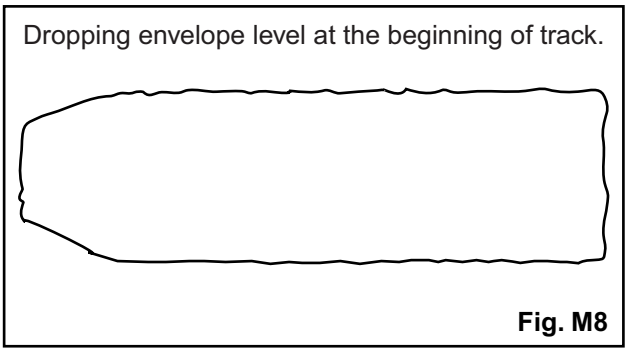


Fig. M8

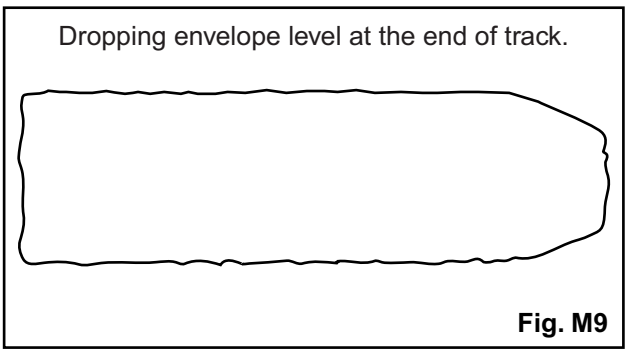


Fig. M9

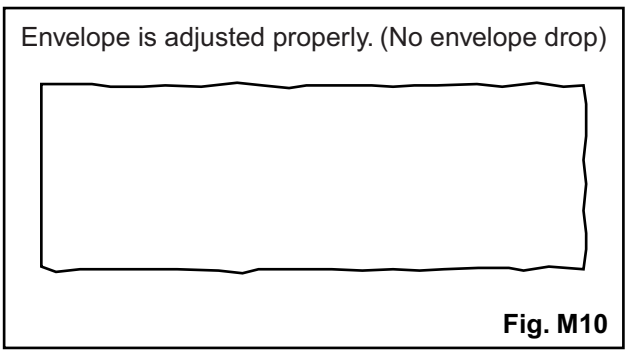


Fig. M10

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the CH UP or DOWN buttons on the unit alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes of the CH UP button on the unit to achieve 1/2 level of envelope should match the number of pushes of the CH DOWN button on the unit from center. If required, redo the “X Value Alignment.”

1-D. Azimuth Alignment of Audio/Control/ Erase Head

Purpose:

To correct the Azimuth alignment so that the Audio/ Control/Erase Head meets tape tracks properly.

Symptom of Misalignment:

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (FL6NS8) and confirm that the audio signal output level is 8kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

Note: Upon completion of the adjustment of Azimuth Adj. Screw, check the X Value by pushing the CH UP or DOWN buttons on the unit alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes of the CH UP button on the unit to achieve 1/2 level of envelope should match the number of pushes of the CH DOWN button on the unit from center. If required, redo the “X Value Alignment.”

1-E. Checking and Alignment of Tape Path during reversing

Purpose:

To make sure that the tape path is well stabilized during reversing.

Symptom of Misalignment:

If the tape path is unstable during reversing, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Insert a blank cassette tape into the tray and set the unit to REV. Then confirm if the tape has been curled up or bent at the Take-up Guide Post[4] or REV Post[5]. (Refer to Fig. M11 and M12.)
2. When the tape has been curled up or bent, turn the alignment screw to adjust the height of REV Post. (Refer to Fig. M11 and M13.)

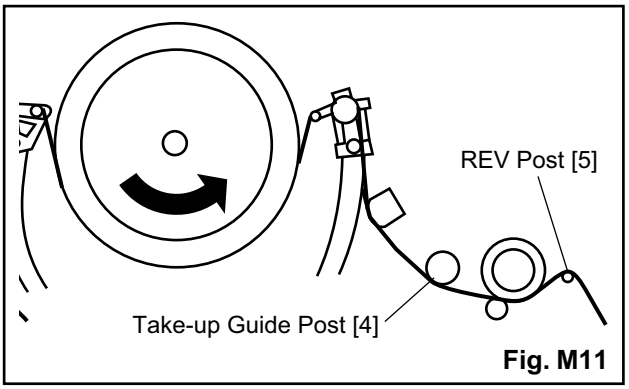


Fig. M11

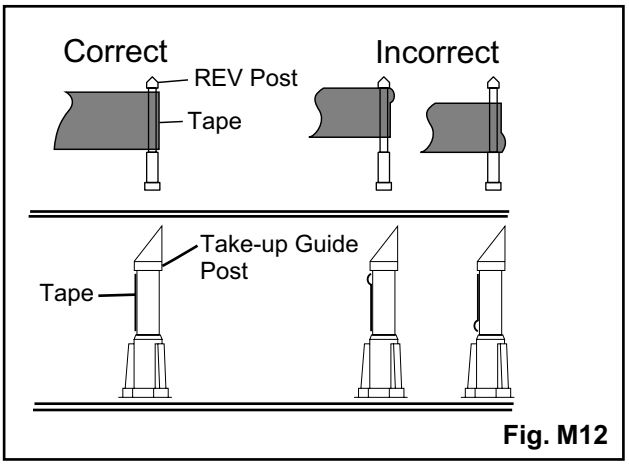


Fig. M12

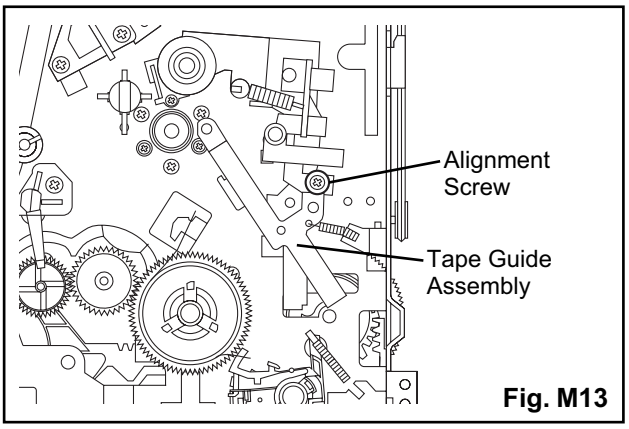


Fig. M13

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [44] and [45] in Fig. DM1H on page 2-4-3. When reassembling, follow the steps in reverse order.

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Guide Holder A	T	DM3H	2(S-1)	
[2]	[1]	Cassette Holder Assembly	T	DM4H		
[3]	[2]	Slider (SP)	T	DM5H	(S-1A), *(L-1)	
[4]	[2]	Slider (TU)	T	DM5H	*(L-2)	
[5]	[4]	Lock Lever	T	DM5H	*(L-3), *(P-1)	
[6]	[2]	Cassette Plate	T	DM5H		
[7]	[7]	Cylinder Assembly	T	DM1H, DM6H	Desolder, 3(S-2)	
[8]	[8]	Loading Motor Assembly	T	DM1H, DM7H	Desolder, LDG Belt, 2(S-3)	
[9]	[9]	ACE Head Assembly	T	DM1H, DM7H	(S-4)	
[10]	[2]	Tape Guide Arm Assembly	T	DM1H, DM8H-1	*(P-2)	
[11]	[10]	C Door Opener	T	DM1H, DM8H-1	(S-4A), *(L-4)	
[12]	[11]	Pinch Arm (B)	T	DM1H, DM8H-1, DM8H-2	*(P-3)	
[13]	[12]	Pinch Arm (A) Assembly	T	DM1H, DM8H-1, DM8H-2		
[14]	[14]	FE Head	T	DM1H, DM9H	(S-5)	
[15]	[15]	Prism	T	DM1H, DM9H	(S-6)	
[16]	[2]	Slider Shaft	T	DM10H	*(L-5)	
[17]	[16]	C Drive Lever (SP)	T	DM10H		
[18]	[16]	C Drive Lever (TU)	T	DM10H	(S-7), *(P-4)	
[19]	[19]	Capstan Motor	B	DM2H, DM11H	3(S-8), Cap Belt	
[20]	[20]	Clutch Assembly (HI)	B	DM2H, DM12H	(C-1)	
[21]	[20]	Center Gear	B	DM12H		
*[22]	[22]	F Brake Assembly (HI)	B	DM2H, DM12H	*(L-6)	
[23]	[22]	Worm Holder	B	DM2H, DM13H-1	(S-9), *(L-7), *(L-8)	
[24]	[22]	Pulley Assembly (HI)	B	DM2H, DM13H-1		
[25]	[25]	Mode Gear (LM)	B	DM2H, DM13H-1	(C-2)	
[26]	[20],[25]	Mode Lever (HI)	B	DM2H, DM13H-1, DM13H-2	(C-3)	
[27]	[22],[23], [26]	Cam Gear (A) (HI)	B	DM2H, DM13H-1, DM13H-2	(C-4)	(+)Refer to Alignment Sec.Page 2-5-1
[28]	[26]	TR Gear C	B	DM2H, DM13H-1	(C-5)	
[29]	[28]	TR Gear Spring	B	DM13H-1		
[30]	[29]	TR Gear A/B	B	DM13H-1		
[31]	[31]	FF Arm (HI)	B	DM1H, DM14H		
[32]	[26]	Idler Assembly (HI)	B	DM1H, DM14H	*(L-9)	
[33]	[26]	BT Arm	B	DM2H, DM14H	*(P-5)	

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[34]	[26]	Loading Arm (SP) Assembly	B	DM2H, DM14H		(+)Refer to Alignment Sec.Page 2-5-1
[35]	[34]	Loading Arm (TU) Assembly	B	DM2H, DM14H		(+)Refer to Alignment Sec.Page 2-5-1
[36]	[16],[26]	M Brake (TU) Assembly (HI)	T	DM1H, DM15H		
[37]	[2],[26]	M Brake (SP) Assembly (HI)	T	DM1H, DM15H	*(P-6)	
[38]	[37]	Tension Lever Assembly	T	DM1H, DM15H		
[39]	[38]	T Lever Holder	T	DM15H	*(L-10)	
[40]	[40]	M Gear (HI)	T	DM1H, DM15H	(C-6)	
[41]	[15],[40]	Sensor Gear (HI)	T	DM1H, DM15H	(C-7)	
[42]	[36],[40]	Reel T	T	DM1H, DM15H		
[43]	[38]	Reel S	T	DM1H, DM15H		
[44]	[34],[38]	Moving Guide S Preparation	T	DM1H, DM16H	(S-11), Slide Plate	
[45]	[35]	Moving Guide T Preparation	T	DM1H, DM16H		
[46]	[19]	TG Post Assembly	T	DM1H, DM16H	*(L-11)	
[47]	[27]	Rack Assembly	R	DM17H		(+)Refer to Alignment Sec.Page 2-5-1
[48]	[47]	F Door Opener	R	DM17H		
[49]	[49]	Cleaner Assembly	T	DM1H, DM6H		
[50]	[49]	CL Post	T	DM6H	*(L-12)	
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)	↓ (6)	↓ (7)

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as identification (location) No. of parts in the figures.

(2): Indicates the part to start disassembling with in order to disassemble the part in column (1).

(3): Name of the part

(4): Location of the part: T=Top B=Bottom R=Right L=Left

(5): Figure Number

(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).

(7): Adjustment Information for Installation
(+):Refer to Deck Exploded Views for lubrication.

.

*** [22] F Brake Assembly (HI) is not used in 2 head model.**

Top View

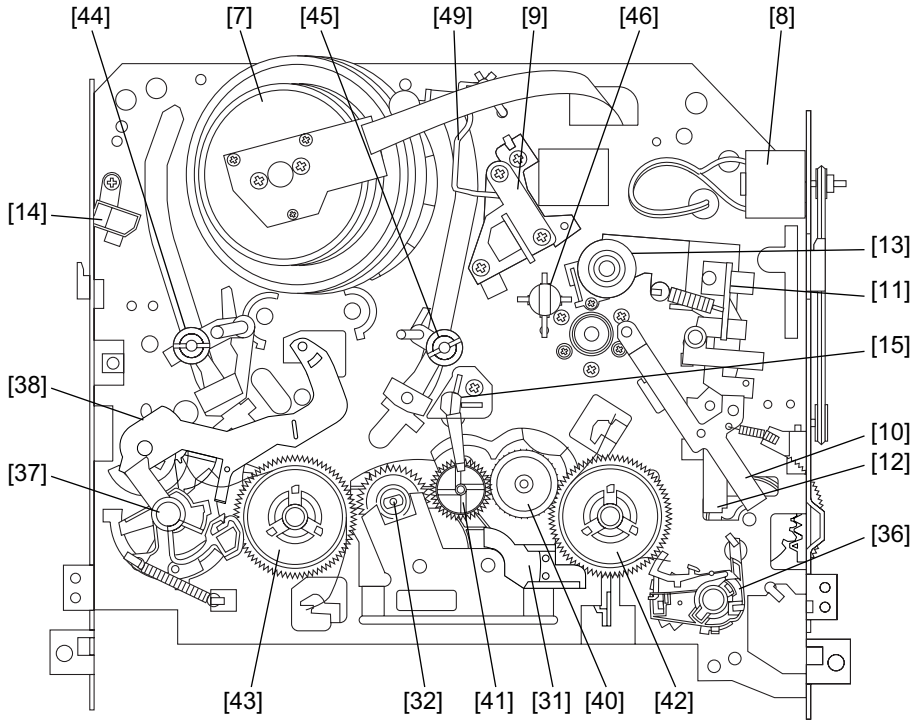


Fig. DM1H

Bottom View

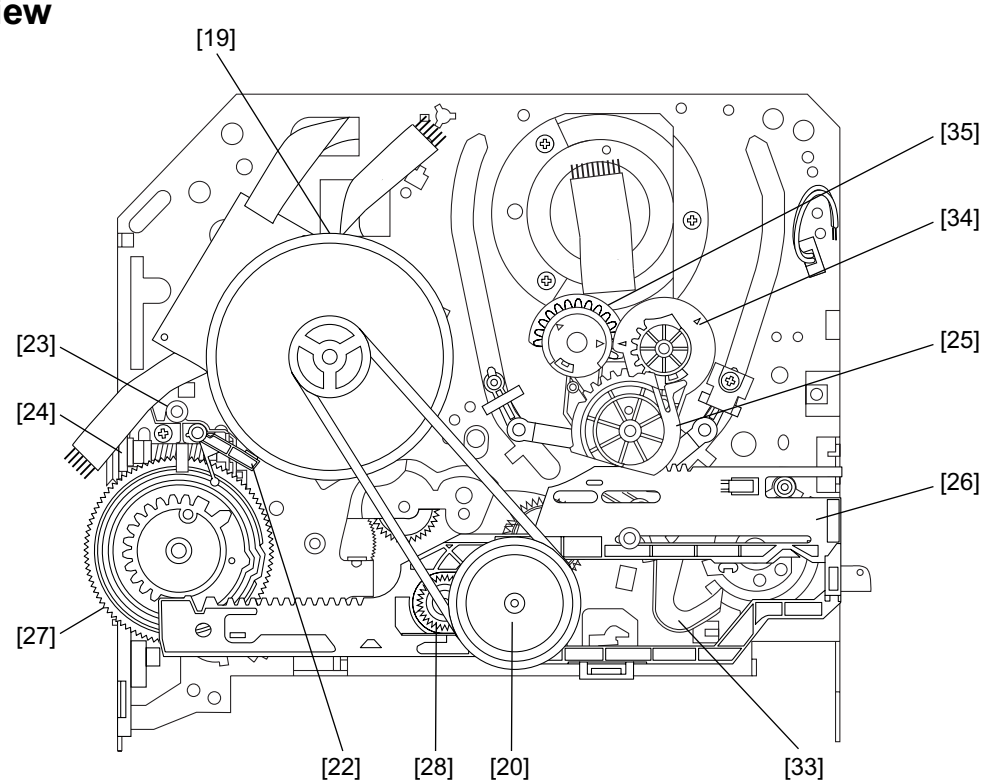


Fig. DM2H

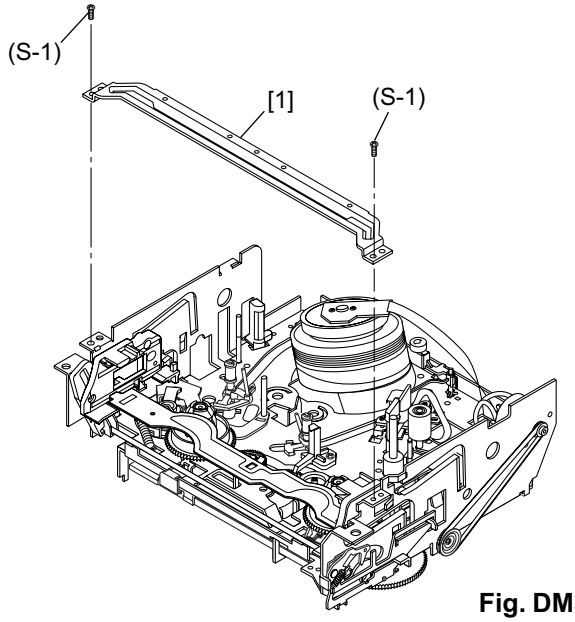
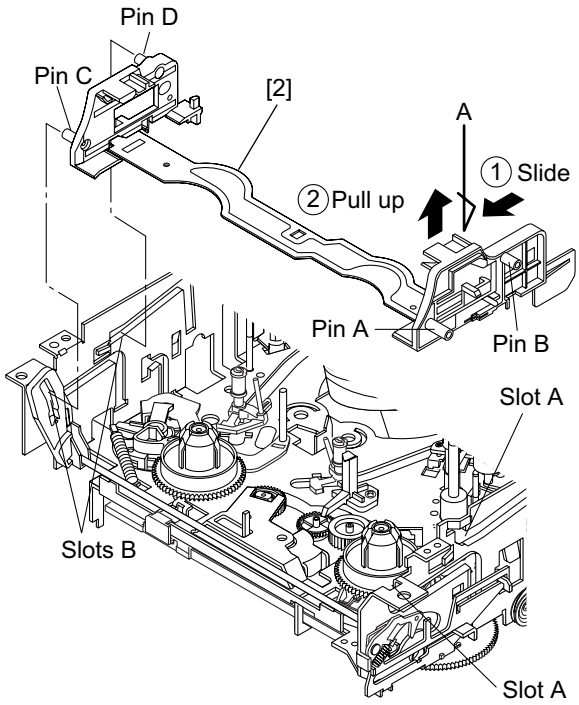


Fig. DM3H



First, while pushing the locking tab as shown in the right, slide and pull up the right side on [2] to release Pin A and Pin B from the slots A.
Then, remove Pin C and Pin D on [2] from the slots B as shown.

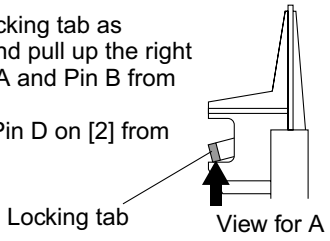
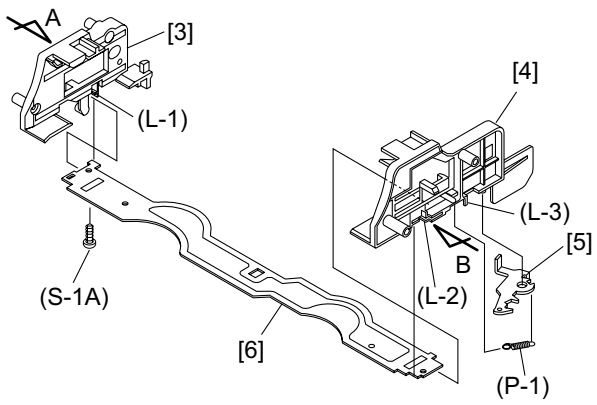
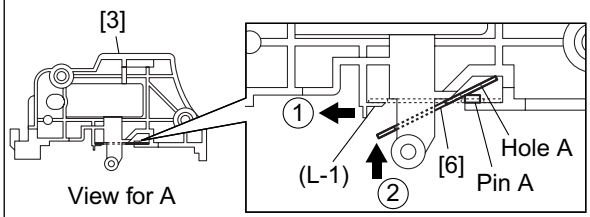


Fig. DM4H



Installation of [3] and [6]

First, insert [6] diagonally in [3] as shown below. Then, install [6] in [3] while pushing (L-1) in the direction of the arrow. After installing [6] in [3], confirm that pin A of [3] enters hole A of [6] properly.



Installation of [4] and [6]

Install [6] in [4] while pulling (L-2) in the direction of the arrow. After installing [6] in [4], confirm that pin B of [4] enters hole B of [6] properly.

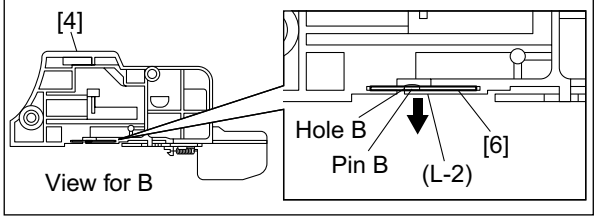


Fig. DM5H

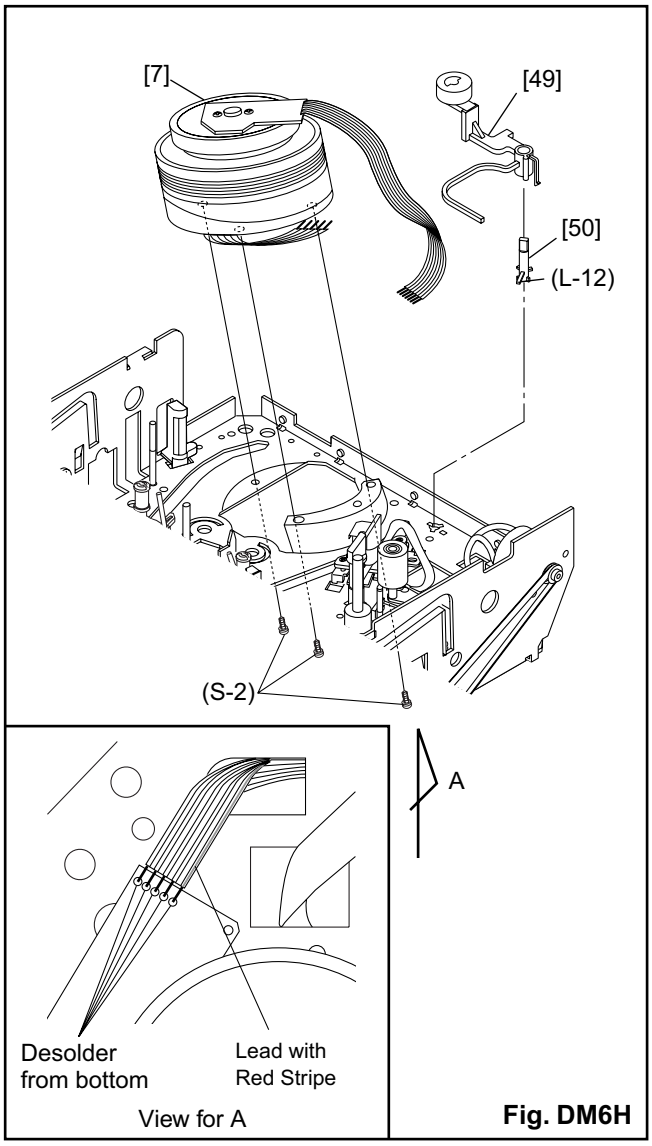


Fig. DM6H

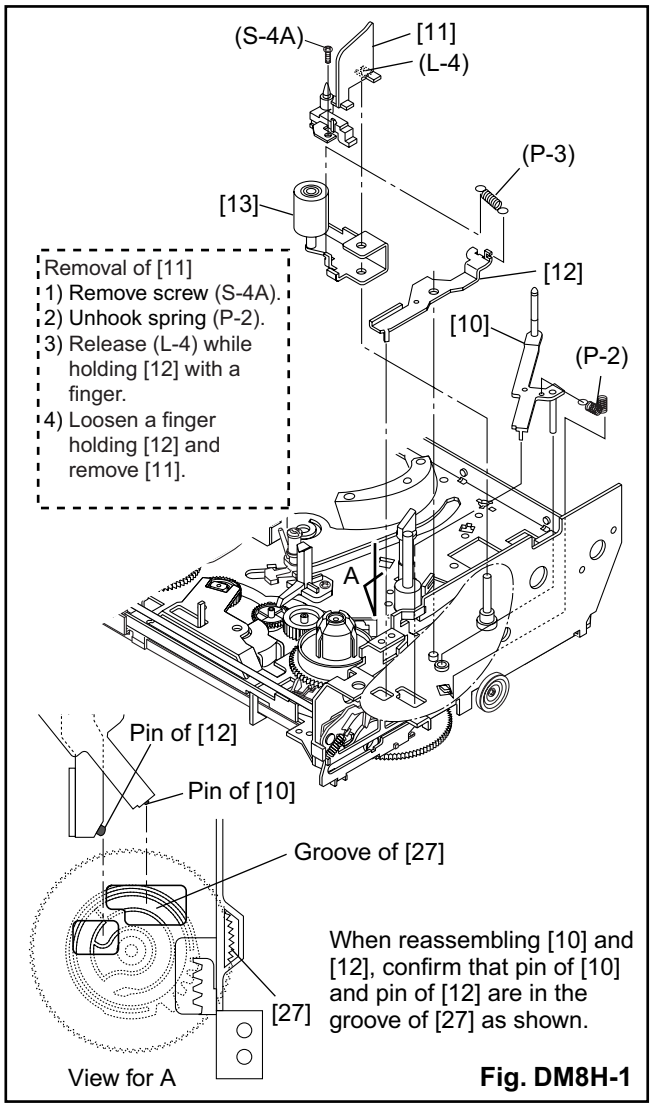


Fig. DM8H-1

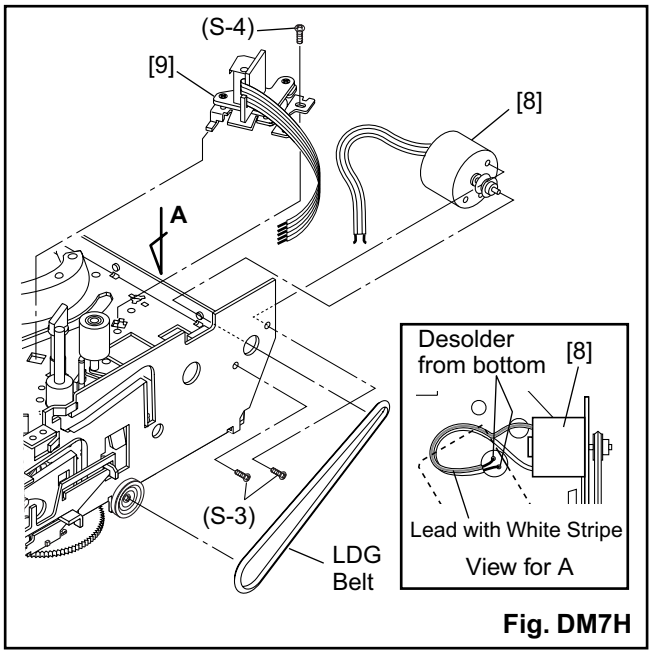


Fig. DM7H

Installation of [13] and [12]

Hook spring (P-3) up to [12] and [13], then install them to the specified position so that [12] will be floated slightly while holding [12] and [13]. (Refer to Fig. A.)

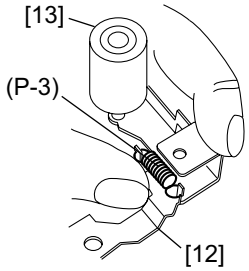


Fig. A

Install pin of [12] in groove of [27]. (Refer to Fig. B.)

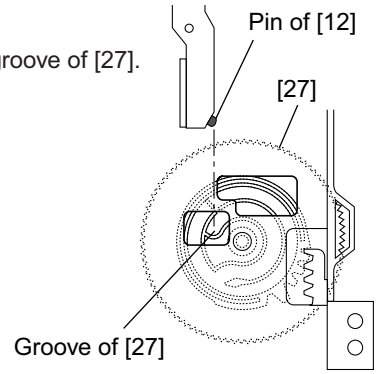


Fig. B (Top view)

Press both [12] and [13] till the groove of chassis pin appears, and adjust [13] to the notch of chassis. Then turn [13] a little in the direction of the arrow while pressing [12]. (Refer to Fig. C.)

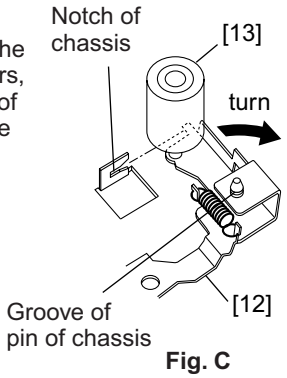


Fig. C

Install [11] and [10] while holding [12]. (Refer to Fig. DM8H-1.)

Fig. DM8H-2

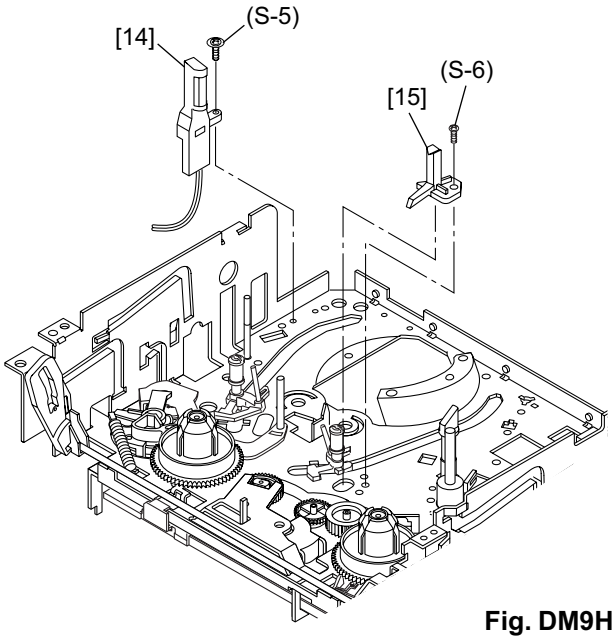


Fig. DM9H

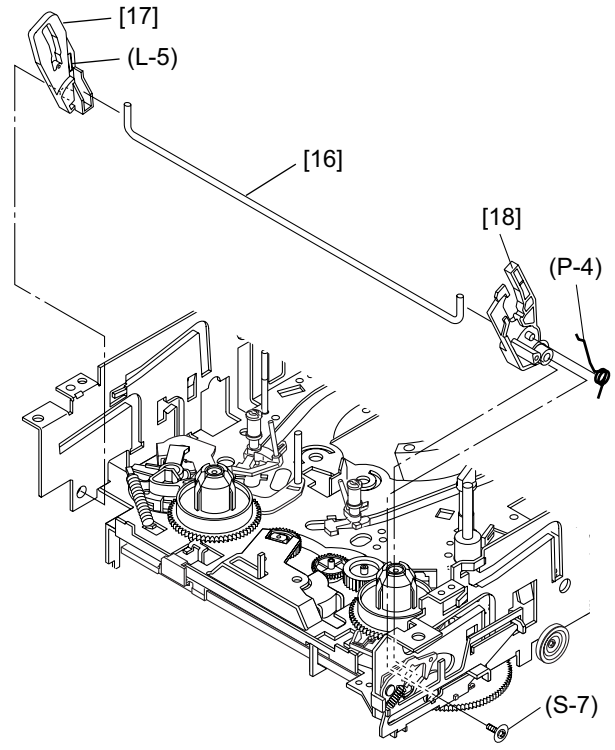
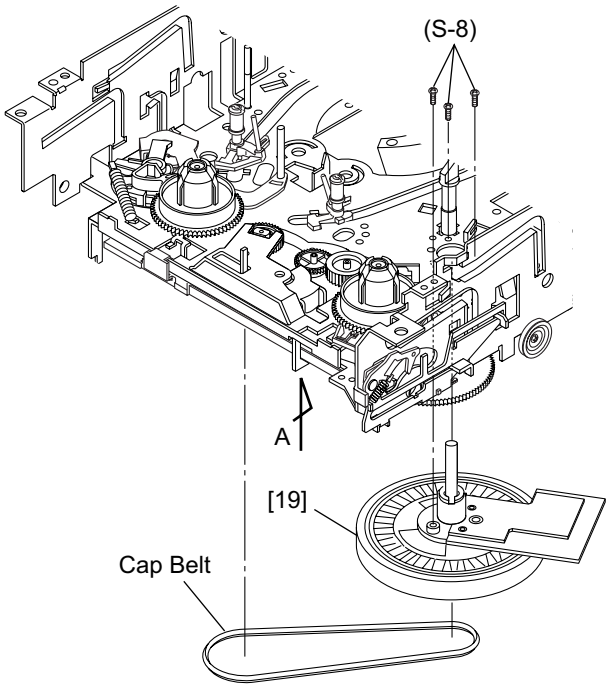


Fig. DM10H



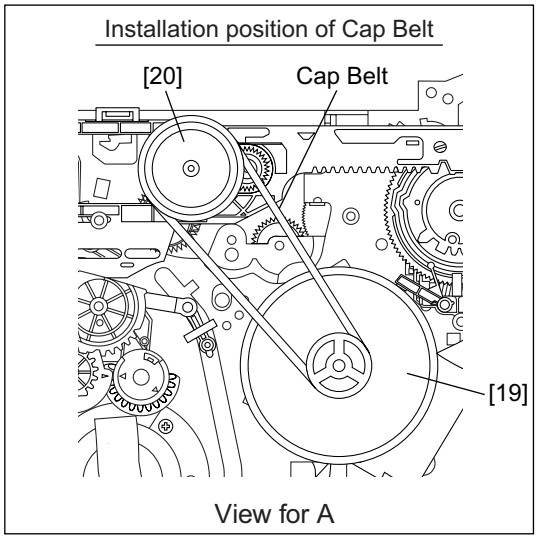
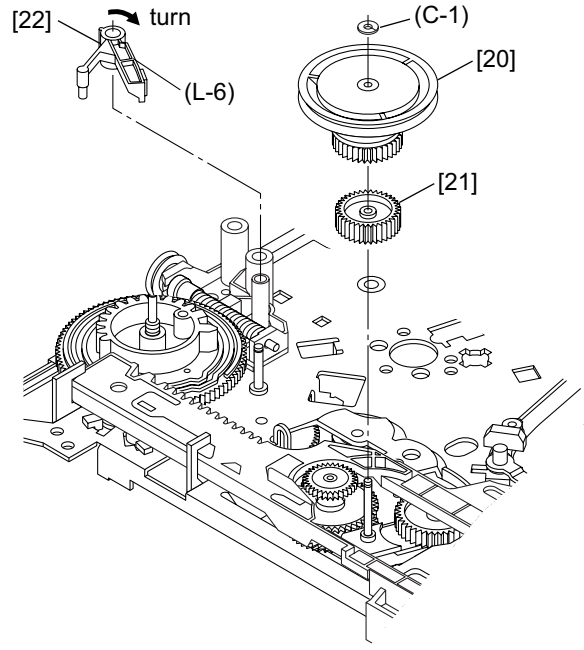


Fig. DM11H



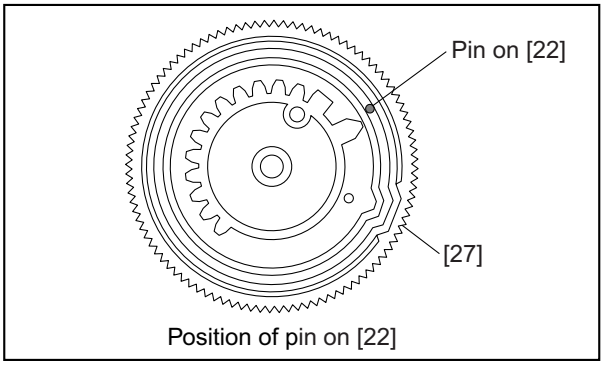


Fig. DM12H

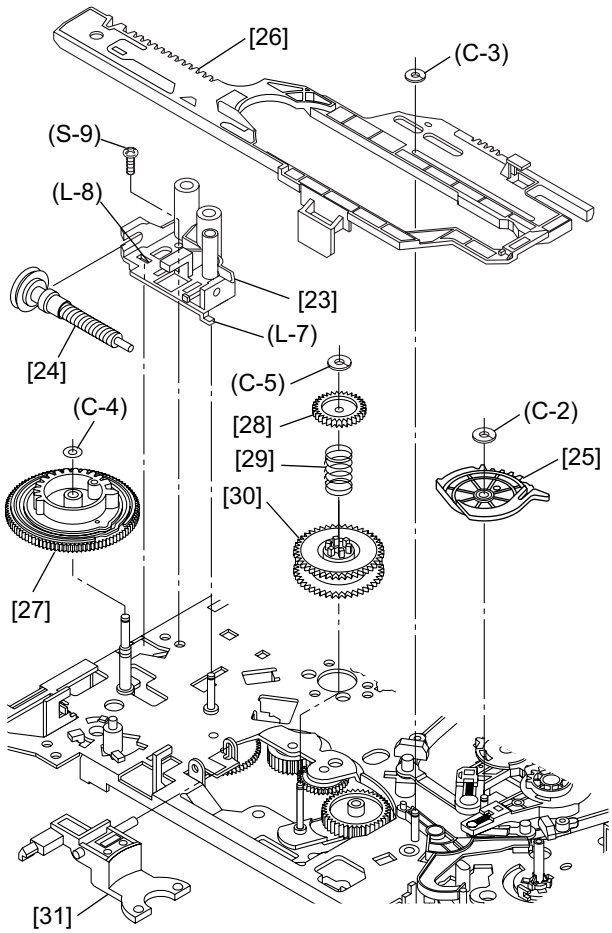
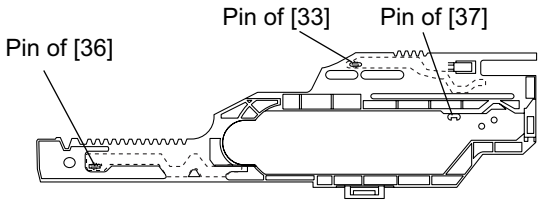
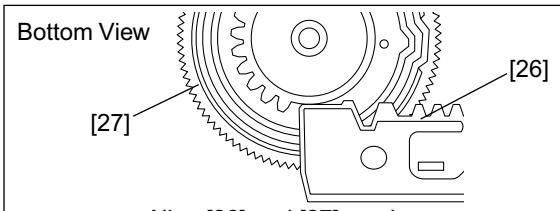


Fig. DM13H-1

Installation of [26]

Position of Mode Lever when installed





Align [26] and [27] as shown.

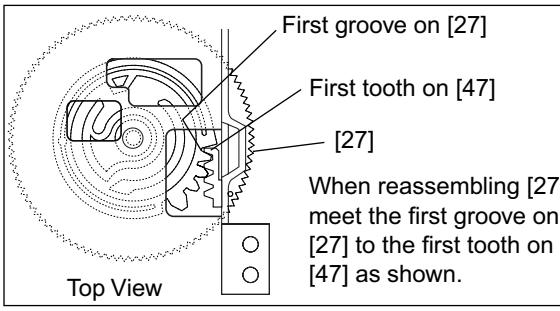

First groove on [27]
First tooth on [47]
[27]
When reassembling [27], meet the first groove on [27] to the first tooth on [47] as shown.
Top View

Fig. DM13H-2

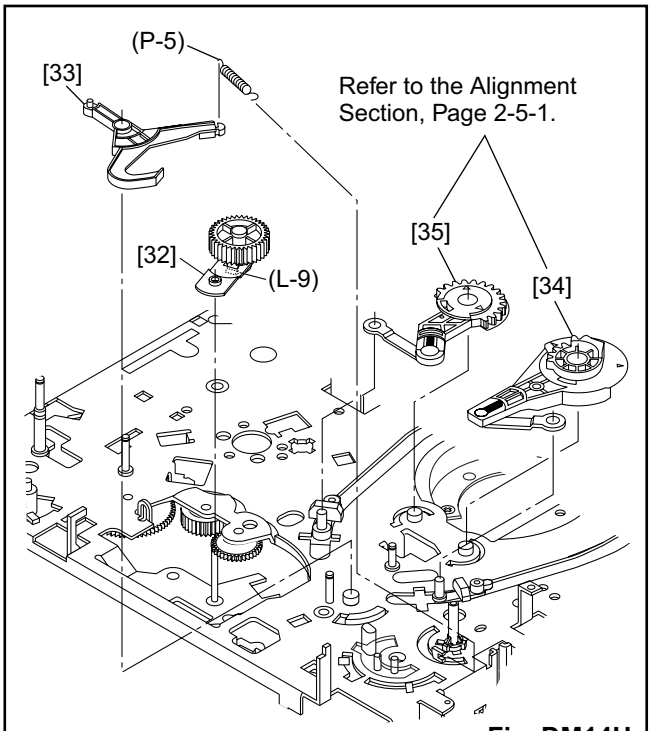


Fig. DM14H

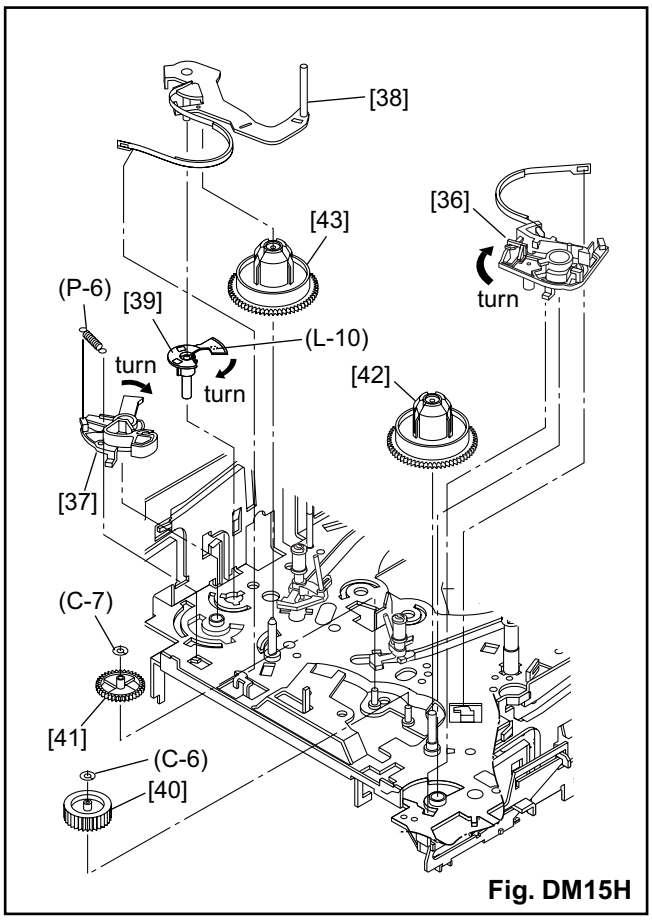


Fig. DM15H

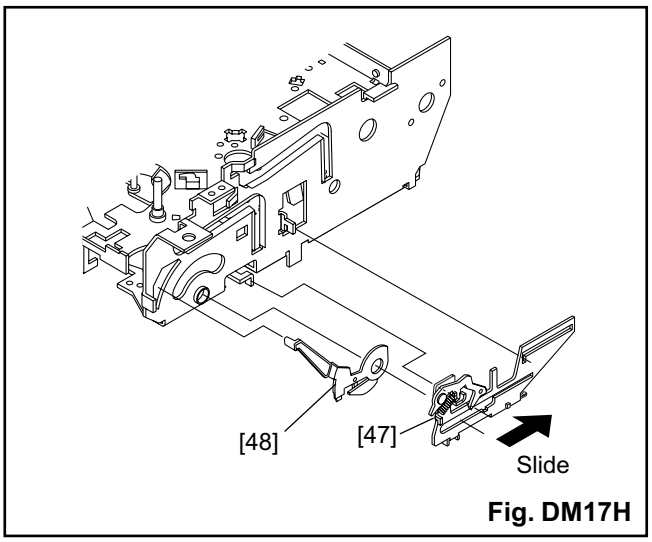


Fig. DM17H

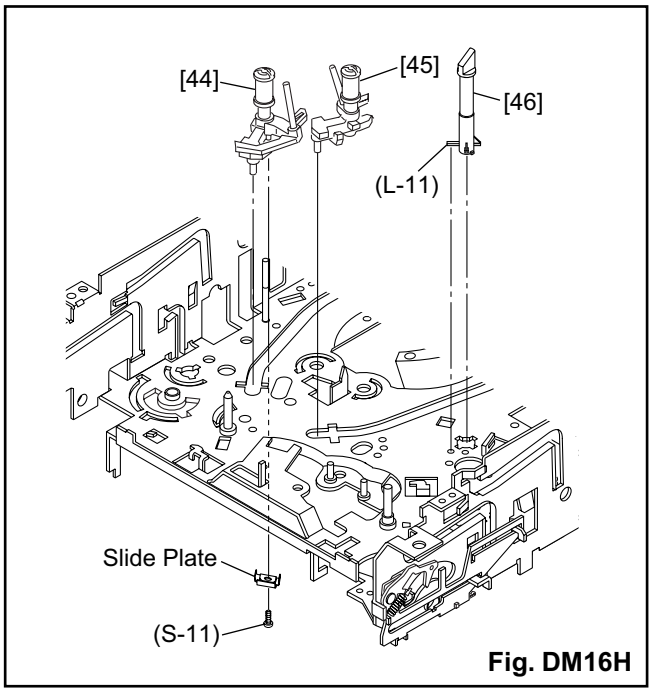


Fig. DM16H

ALIGNMENT PROCEDURES OF MECHANISM

The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.
All alignments are to be performed with the mechanism in Eject mode, in the sequence given. Each procedure assumes that all previous procedures have been completed.

IMPORTANT:
If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

Alignment points in Eject Position

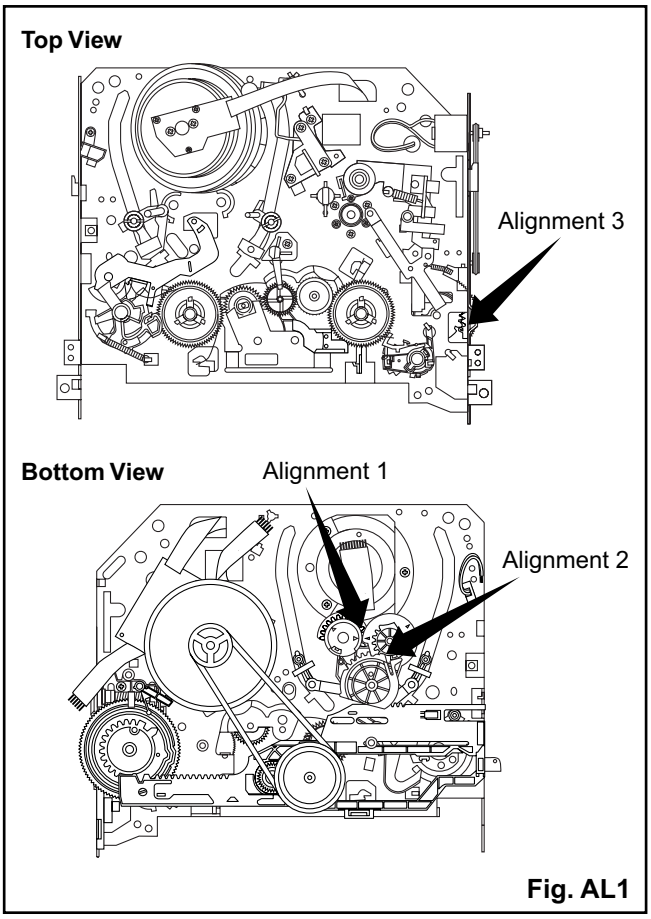


Fig. AL1

Alignment 1

Loading Arm (SP) and (TU) Assembly

Install Loading Arm (SP) and (TU) Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Mode Gear

Keeping the two triangles pointing at each other, install the Loading Arm (SP) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.

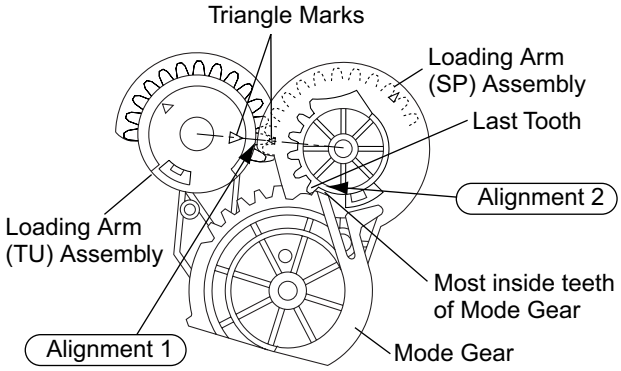


Fig. AL2

Alignment 3

Cam Gear (A) (HI), Rack Assembly

Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) (HI) as shown in Fig. AL3.

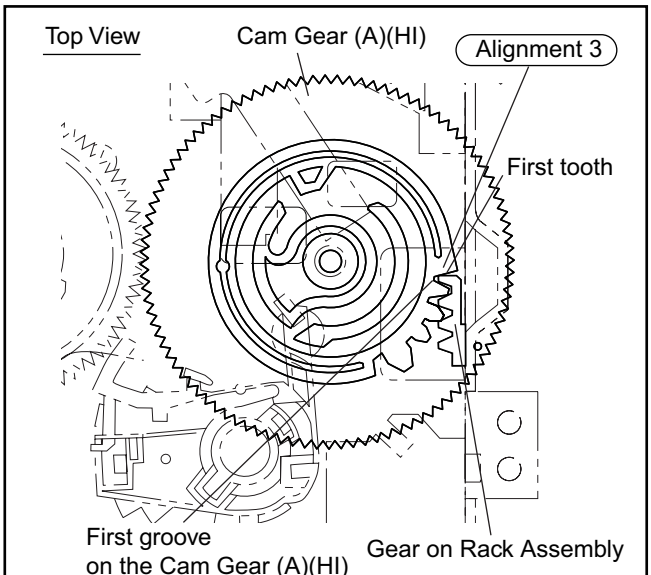
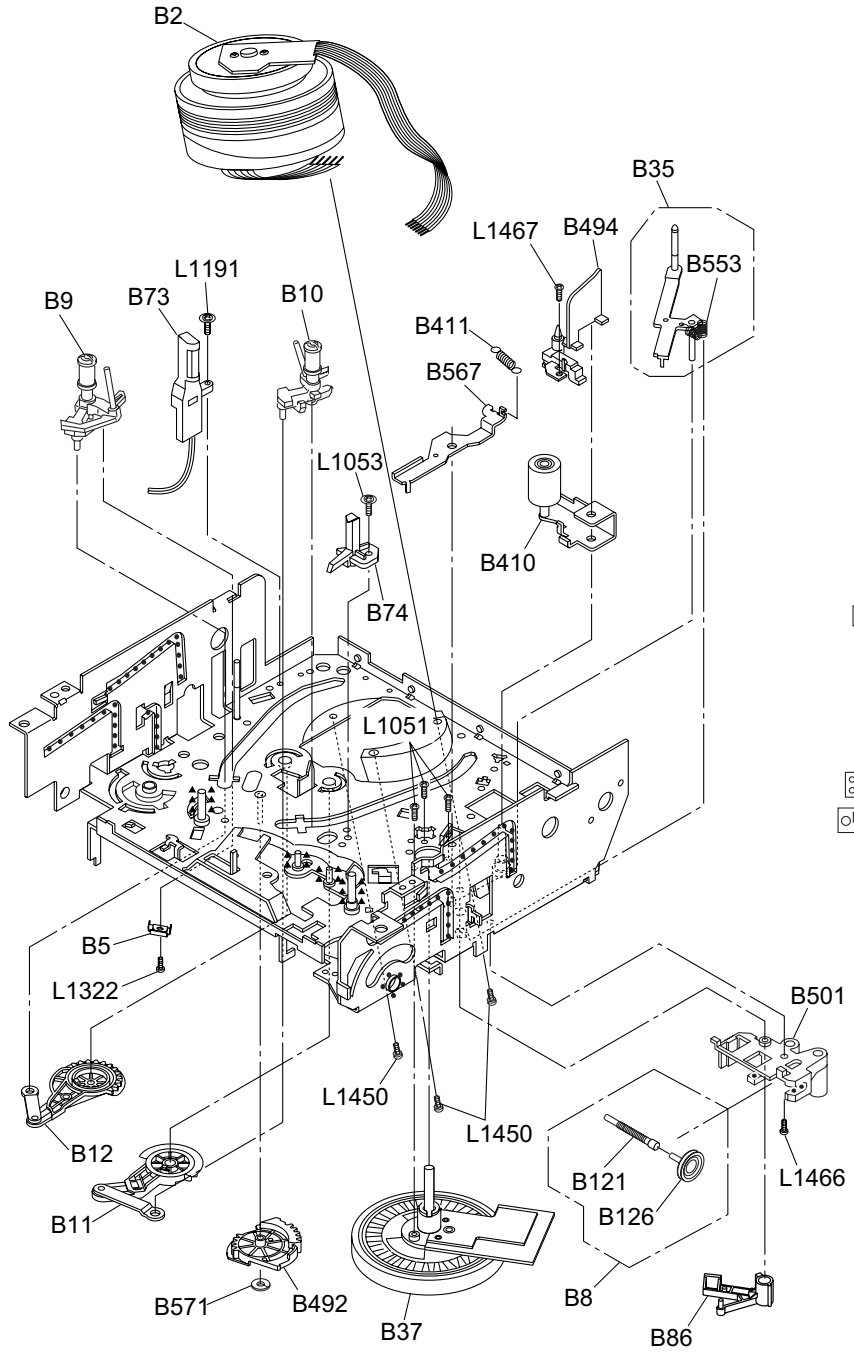


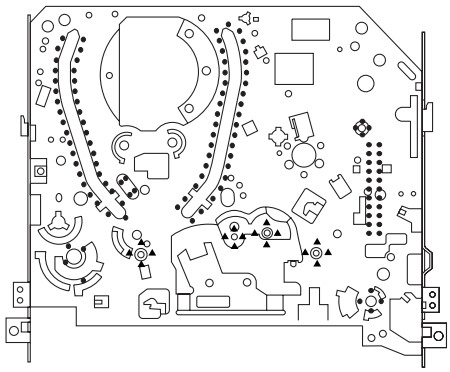
Fig. AL3

DECK EXPLODED VIEWS

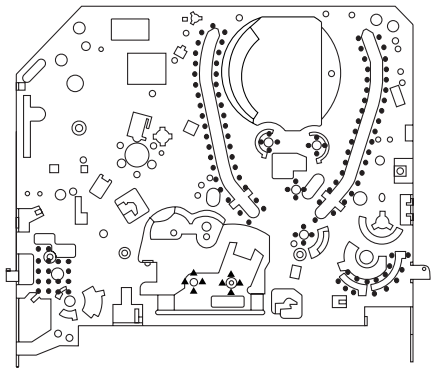
Deck Mechanism View 1

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150





Chassis Assembly
Top View (Lubricating Point)

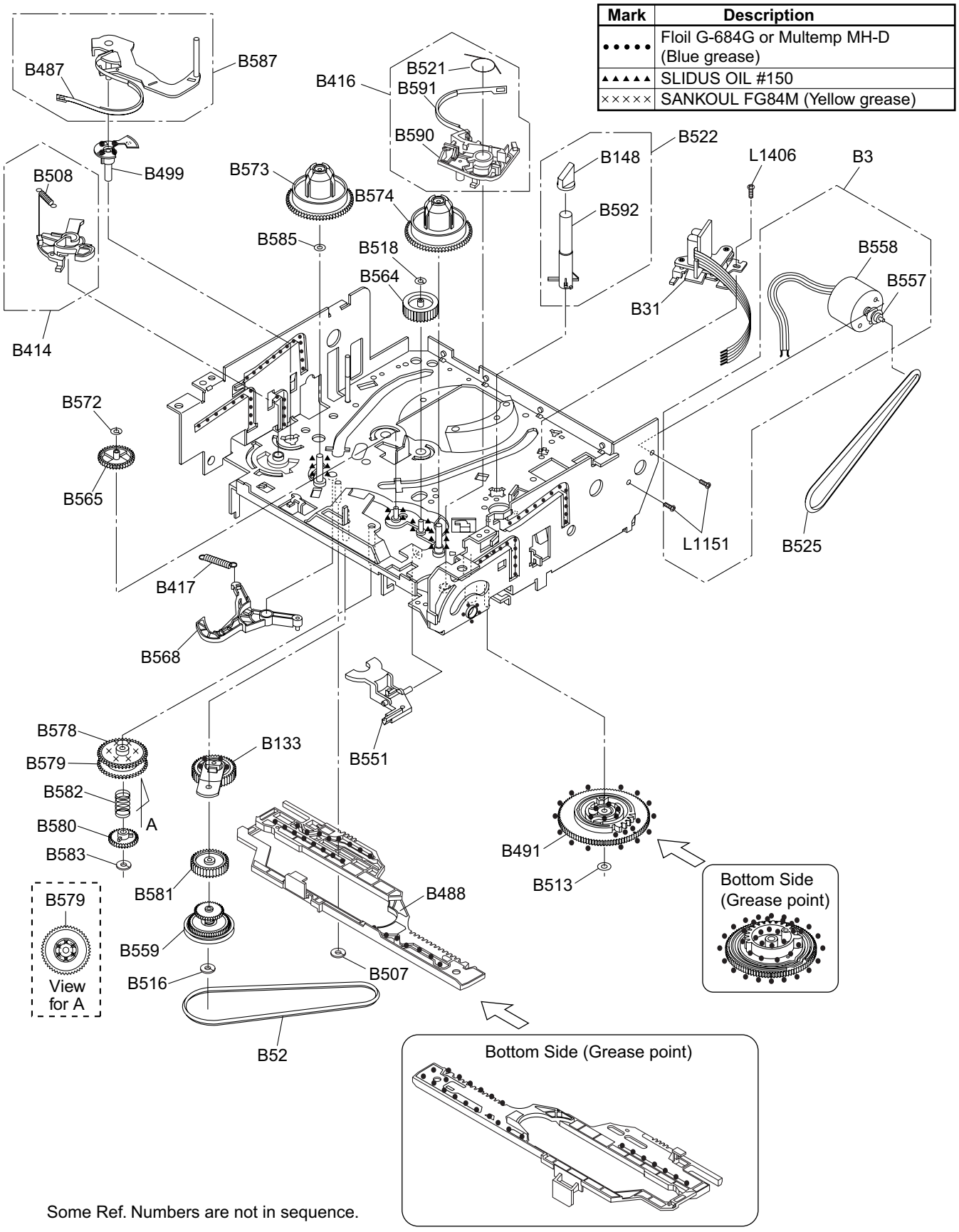


Chassis Assembly
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

Deck Mechanism View 2

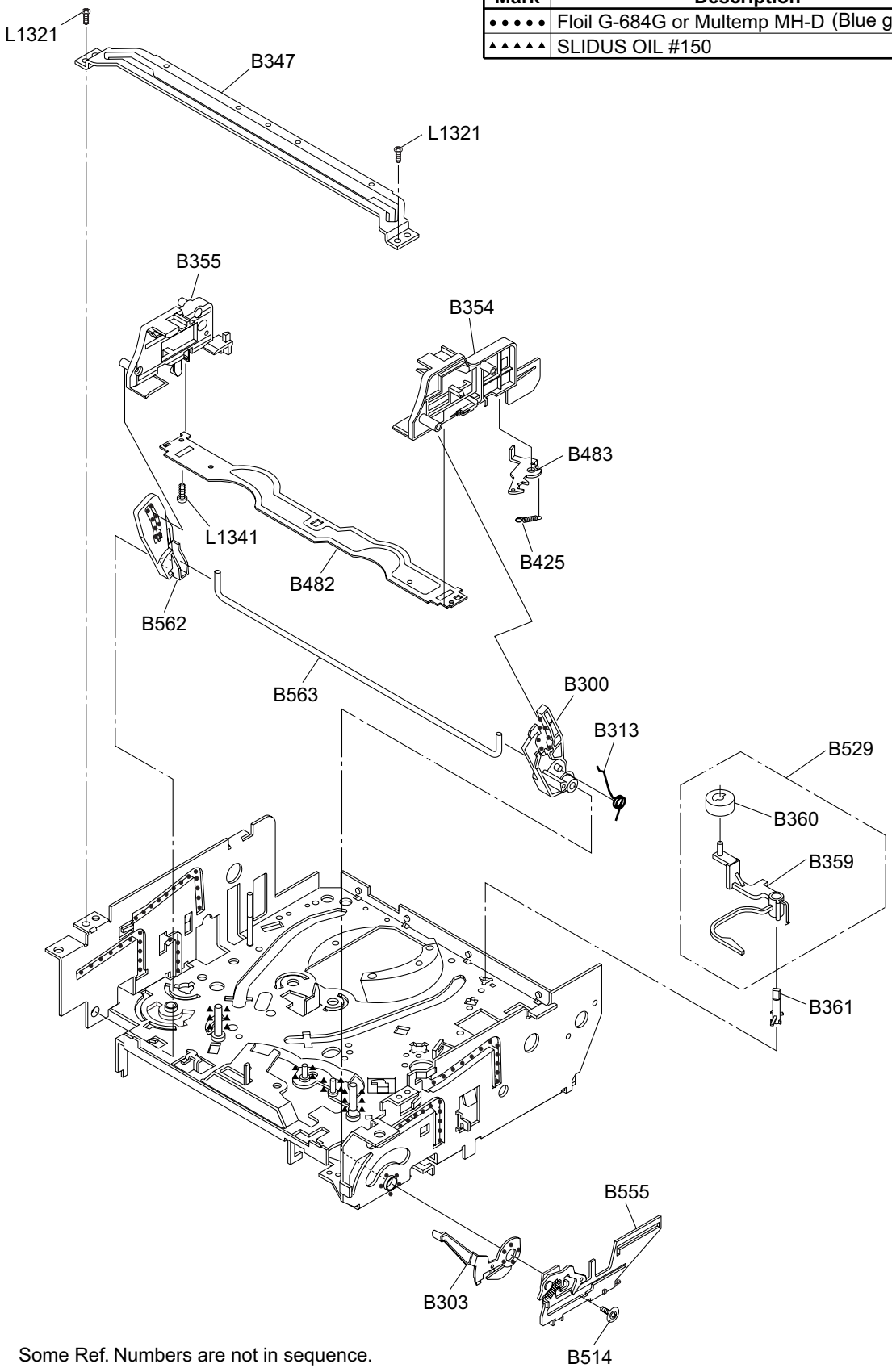
Mark	Description
•••••	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150
×××××	SANKOUL FG84M (Yellow grease)



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150



Some Ref. Numbers are not in sequence.

DECK PARTS LIST

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	B2		P000468620	1VSA14761	CYLINDER ASSEMBLY(N236C) MK14 PAL 6HD
	B3		P000468180	1VSA12912	LOADING MOTOR ASSEMBLY MK14
	B5		P000467990	0VM416429	SLIDE PLATE MK12.5
	B8			0VSA13501	PULLEY ASSEMBLY(HI) MK12
	B9		P000468130	1VSA12887	MOVING GUIDE S P.P MK12.5
	B10		P000468120	1VSA12886	MOVING GUIDE T P.P MK12.5
	B11		P000468100	1VSA12880	LOADING ARM(TU) ASSEMBLY MK12
	B12		P000468090	1VSA12879	LOADING ARM(SP) ASSEMBLY MK12
	B31		P000468140	1VSA12888	AC HEAD ASSEMBLY MK12.5
	B35		P000468150	1VSA12889	TAPE GUIDE ARM ASSEMBLY MK12.5
	B37		P000468630	1VSA14833	CAPSTAN MOTOR HI(N9688) 288/VCZC1301
	B52		P000467850	0VM411138	CAP BELT MK10
	B73		P000468190	DHVEC01AL007	FE HEAD(MK12) HVFHP0047A
	B74		P000467540	0VM202870	PRISM MK10
	B86		P000468010	0VSA13447	F BRAKE ASSEMBLY(HI) MK12
	B121		P000467900	0VM414091	WORM MK12
	B126		P000467940	0VM414330B	PULLEY MK12
	B133		P000468170	1VSA12903	IDLER ASSEMBLY(HI) MK12
	B148		P000467780	0VM407664C	TG CAP MK6
	B300		P000467610	0VM203773	C DRIVE LEVER(TU) MK12
	B303		P000467570	0VM203751C	F DOOR OPENER MK12
	B313		P000467920	0VM414145	C DRIVE SPRING MK12
	B347		P000467650	0VM304920	GUIDE HOLDER A MK10
	B354		P000467500	0VM101172F	SLIDER(TU) MK12
	B355		P000467520	0VM101182K	SLIDER(SP) MK12
	B359		P000467630	0VM304413	CLEANER LEVER MK10
	B360		P000467800	0VM410032C	CLEANER ROLLER MK9
	B361		P000467840	0VM411114	CL POST MK10
	B410		P000468110	1VSA12881	PINCH ARM(A) ASSEMBLY(5) MK12
	B411		P000467950	0VM414644	PINCH SPRING MK12
	B414		P000468030	0VSA13655	M BRAKE(SP) ASSEMBLY(HI) MK12
	B416			0VSA13449	M BRAKE(TU) ASSEMBLY(HI) MK12
	B417		P000467930	0VM414221G	TENSION SPG(3002645) MK12.5
	B425		P000467830	0VM411110	LOCK LEVER SPRING MK10
	B482		P000468040	1VM220271	CASSETTE PLATE
	B483		P000467910	0VM414095	LOCK LEVER MK12
	B487		P000468050	1VM320582	BAND BRAKE(SP) MK12.5
	B488		P000467530	0VM101352	MODE LEVER(HI) MK12.5
	B491		P000467510	0VM101176G	CAM GEAR(A)(HI) MK12
	B492		P000467620	0VM204236	MODE GEAR(LM) MK12
	B494		P000467670	0VM305719	C DOOR OPENER MK12
	B499		P000467700	0VM305729C	T LEVER HOLDER MK12
	B501		P000467590	0VM203767	WORM HOLDER MK12
	B507		P000467810	0VM410058	REEL WASHER MK9 5*2.1*0.5
	B508		P000467970	0VM414899	S BRAKE SPRING(HI) MK12
	B513		P000467770	0VM402629A	P.S.W F 6*2.55*0.5
	B514			0VM411535B	SCREW RACK MK14
	B516		P000467810	0VM410058	REEL WASHER MK9 5*2.1*0.5
	B518		P000467790	0VM408485A	P.S.W CUT 1.6X4.0X0.5T
	B521		P000467980	0VM414943	REV BRAKE SPG(HI) MK12
	B522			0VSA11012	TG POST ASSEMBLY MK10
	B525		P000467880	0VM412804	LDG BELT MK11
	B529			0VSA11161	CLEANER ASSEMBLY MK10
	B551		P000467760	0VM306183	FF ARM(HI) MK12
	B553		P000467870	0VM412555	REV SPRING MK11
	B555		P000468070	1VSA11842	RACK ASSEMBLY MK14
	B557			0VM403205A	MOTOR PULLEY U5
	B558			MMDZB12MF003	LOADING MOTOR RF-500TB-12560
	B559		P000468020	0VSA13450	CLUTCH ASSEMBLY(HI) MK12
	B562		P000467600	0VM203772	C DRIVE LEVER(SP) MK12
	B563		P000467740	0VM305762B	SLIDER SHAFT MK12
	B564		P000467720	0VM305755	M GEAR(HI) MK12
	B565		P000467730	0VM305756	SENSOR GEAR(HI) MK12
	B567		P000468160	1VSA12890	PINCH ARM(B) ASSEMBLY MK12.5
	B568		P000467690	0VM305728	BT ARM MK12
	B571		P000467790	0VM408485A	P.S.W CUT 1.6X4.0X0.5T
	B572		P000467790	0VM408485A	P.S.W CUT 1.6X4.0X0.5T
	B573		P000467560	0VM203436	REEL S MK11
	B574		P000467550	0VM202872C	REEL T MK10
	B578		P000467640	0VM304440	TR GEAR A MK10
	B579		P000467750	0VM305900	TR GEAR B MK12
	B580		P000467710	0VM305743A	TR GEAR C MK12
	B581		P000467660	0VM305081	CENTER GEAR MK11
	B582		P000467860	0VM411187C	TR GEAR SPRING MK10
	B583		P000467960	0VM414741	CAM WASHER MK12
	B585		P000467890	0VM413663	PSW(317505) MK11
	B587		P000468080	1VSA12878	TENSION LEVER ASSEMBLY MK12
	B590		P000467580	0VM203752E	BRAKE ARM(TU) MK12
	B591		P000467680	0VM305724C	BAND BRAKE(TU) MK12
	B592		P000467820	0VM411108E	TG POST MK10
	L1051			GPJB9060	SCREW B-TIGHT M2.6X6 PAN HEAD+
	L1053			GCJS9080	SCREW S-TIGHT M2.6X8 WASHER HEAD+
	L1151			CPJ39040	SCREW SEMS M2.6X4 PAN HEAD+
	L1191			GCJS9080	SCREW S-TIGHT M2.6X8 WASHER HEAD+
	L1321			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	L1322			GBJBY040	SCREW B-TIGHT M2.3X4 BIND HEAD+
	L1341			GPJP2060	SCREW P-TIGHT M2X6 PAN HEAD+
	L1406			0VM410964A	AC HEAD SCREW MK14
	L1450			CPJ39050	SCREW SEMS M2.6X5 PAN HEAD+
	L1466			GBJS9060	SCREW S-TIGHT M2.6X6 BIND HEAD+
	L1467			SCJ39050	SCREW M2.6X5 WASHER HEAD+

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